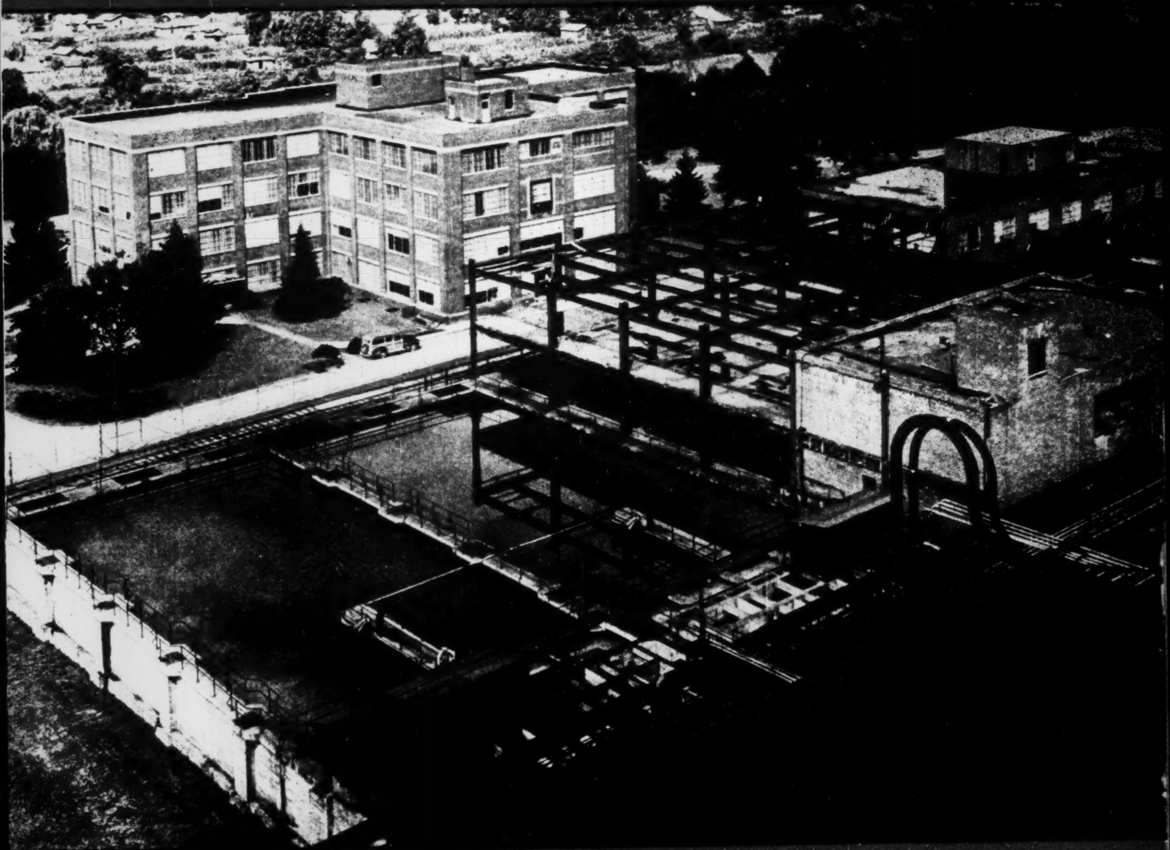
ENGINEERING NEWS-RECORD

A McGRAW-HILL PUBLICATION

AUGUST 4, 1949



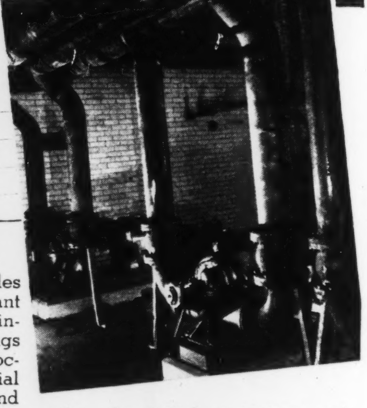
Plant layout problem solved: An eight-story building over a water filtration works (See p. 39)

PREPARING DEEP-WATER TUNNEL JOB

• • •

DAM RAISED TO MEET POWER DEMAND

NATIONAL BISCUIT COMPANY
HOUSTON, TEXAS BAKERY
ROBERT J. CUMMINS
Consulting Engineer
REG. F. TAYLOR
Mechanical Engineer
BYERS IRON



To MINIMIZE MAINTENANCE IN THIS 11 ACRE BAKERY— BYERS WROUGHT IRON PIPE

Representing an investment of over $4,000,000, the mammoth new building of National Biscuit Company at Houston is one of the largest baking plants in the United States. To further the designer's aim of maximum utility with minimum maintenance, Byers Wrought Iron pipe was used in a number of vital services, where severe corrosion was anticipated: chilled and condenser water lines in the air conditioning system; underground gas lines; and process lines. One interesting process application is a lard line, installed inside a larger pipe which carries steam to keep the lard liquified. Miles of Byers Wrought Iron pipe are used in this Bakery.

In earlier days when building piping services were confined to plumbing and heating lines, the pipe designer's job was simple, and his own individual experience generally provided an adequate guide in material selection. Today, almost every building has numerous added services, that have brought a new set of corrosive conditions with them. Air Conditioning provides one example . . . and it is significant that an impressive number of installations in the largest buildings have utilized wrought iron. Process lines, of course, require special individual study to determine and interpret the specific corrosive conditions. Here, again, designers have found in wrought iron their answer to a multitude of varied problems.

Wrought iron's superior corrosive resistance comes from its unique composition and structure. Tiny fibers of glass-like silicate slag, threaded through the body of high-purity iron, halt and disperse corrosive attack, and so discourage pitting. The fibers also help to anchor the initial protective scale, which shields the underlying metal.

You will find some helpful, interesting information on wrought iron in our booklet, THE A B C's OF WROUGHT IRON. We will be glad to send you a copy, on request.

A. M. Byers Co., Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, Salt Lake City, Seattle, San Francisco. Export Division: New York, N. Y.

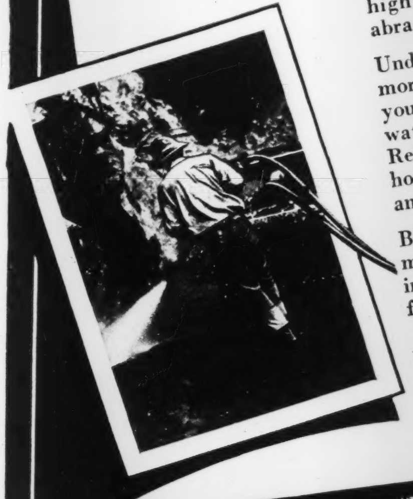
CORROSION COSTS YOU MORE THAN WROUGHT IRON

BYERS
GENUINE WROUGHT IRON
TUBULAR AND HOT ROLLED PRODUCTS
ELECTRIC FURNACE QUALITY ALLOY AND STAINLESS STEEL PRODUCTS

Cuts—Gouges—Abrasion—Shock

bounce off this new Redwing Cord Water Hose!

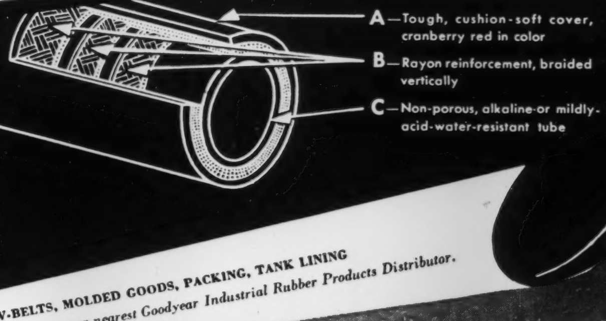
THERE'S a new, different water hose for general industrial and construction use in the Goodyear line—REDWING CORD water hose *with a cushion cover.* This new cover stock is cushion-soft—but strong. It's high-tension rubber that literally bounces away abrasion, cuts, shock and gouges.



Under that soft, super-strong cover you'll find two more reasons why REDWING CORD water hose gives you longer service. Its tube is non-porous—resists water absorption and alkaline or slightly acid waters. Reinforcement used in the new REDWING CORD water hose is springy, resilient rayon—giving it more resistance to pulling tow-rope strains.

Because REDWING CORD is vertically braided, it is mass-produced. The saving this means—plus the built-in strength of REDWING CORD—makes it your best buy for longer service and low cost in the long run.

Ask the G.T.M.—Goodyear Technical Man—about REDWING CORD water hose with the cushion cover. Or write Goodyear, Akron 16, Ohio.


A—Tough, cushion-soft cover, cranberry red in color
B—Rayon reinforcement, braided vertically
C—Non-porous, alkaline-or mildly-acid-water-resistant tube

GOODYEAR INDUSTRIAL RUBBER PRODUCTS

GTM-Specified

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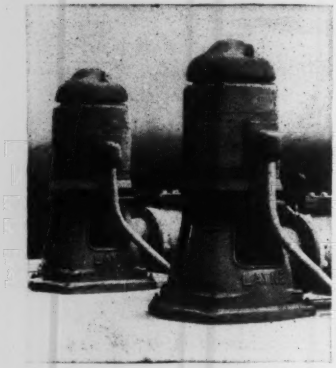
for General Industrial and
Construction Use

FOR HOSE, FLAT BELTS, V-BELTS, MOLDED GOODS, PACKING, TANK LINING
built to the world's highest standard of quality, phone your nearest Goodyear Industrial Rubber Products Distributor.

GOODYEAR

THE GREATEST NAME IN RUBBER

Redwing—T.M. The Goodyear Tire & Rubber Company



What's to be Said About Durability

Durability in a well water system is something that doesn't just happen.

It has to be built-in from carefully made plans, extra good materials and a lot of know how.

With nearly seventy years of experience in designing, building, testing, installing, servicing—and repairing well water systems, it seems quite logical that Layne might know something about what it takes to create durability.

Layne does! And that's a very emphatic statement backed up by actual operating facts on hundreds of systems, many of which according to their tremendous production records, should have been worn out years ago, but are still humming along at remarkably high efficiency.

Absolute perfection in any kind of mechanical equipment has never been achieved, but Layne can assure every buyer that their systems are definitely unmatched in long life durability,—a fact that probably accounts for their extraordinarily wide use.

For further information, catalogs, etc., address Layne & Bowler, Inc., General Offices, Memphis 8, Tenn.

LAYNE

WELL WATER SYSTEMS

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ENGINEERING NEWS-RECORD

VOLUME 143 **AUGUST 4, 1949** **NO. 5**

WALDO G. BOWMAN
Editor

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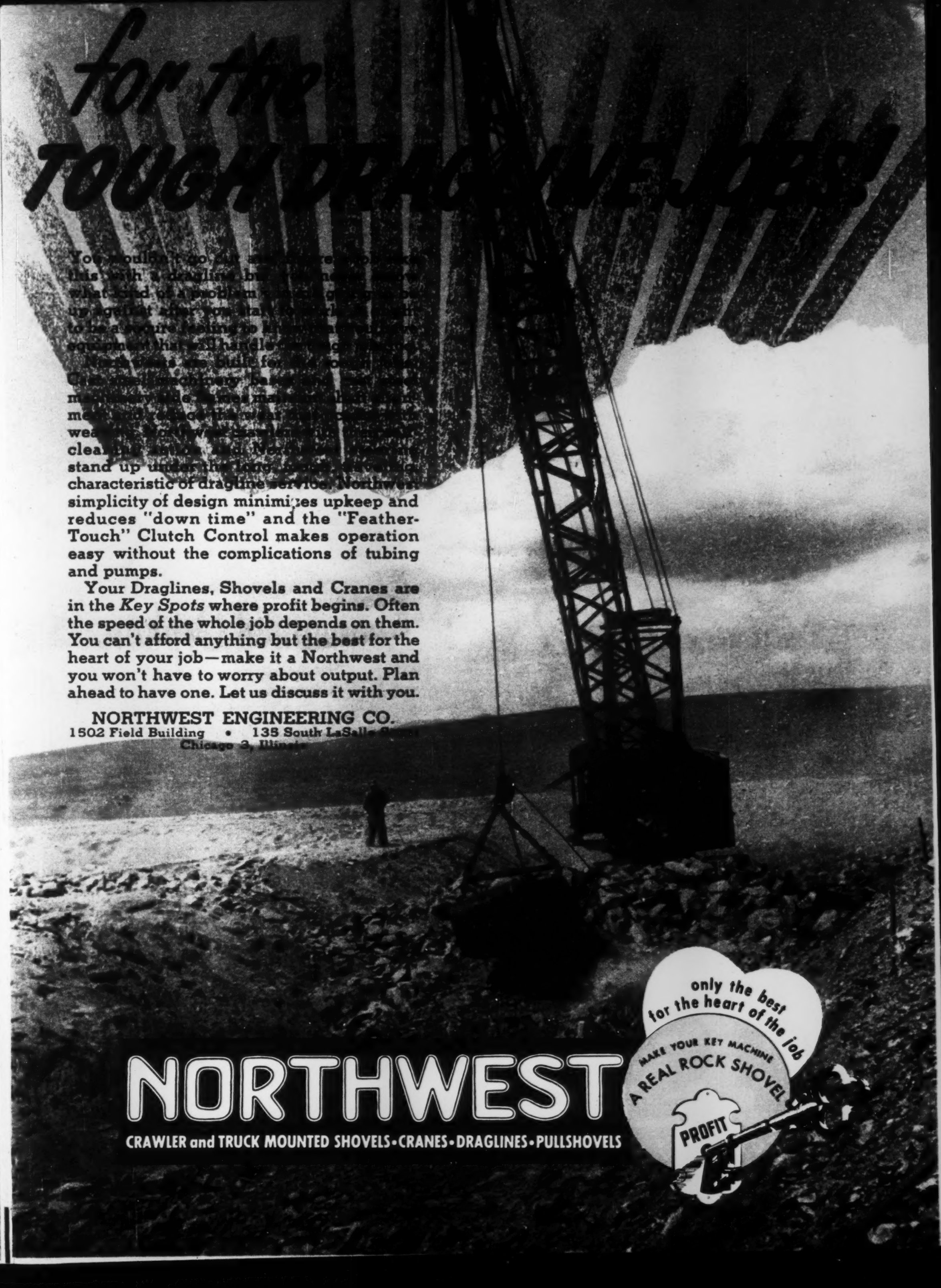
for the TOUGH DRAGLINE JOBS!



You wouldn't go out [illegible] this with a dragline but [illegible] what kind of a problem [illegible] up against after you start [illegible] to be a secure feeling to [illegible] equipment that will handle [illegible]

Northwests are built for [illegible] Cast steel machinery base [illegible] machinery [illegible] mem[illegible] and reduce the wear [illegible] wea[illegible] Northwest [illegible] clea[illegible] and Northwest [illegible] stand up under the long [illegible] characteristic of dragline service. Northwest simplicity of design minimizes upkeep and reduces "down time" and the "Feather-Touch" Clutch Control makes operation easy without the complications of tubing and pumps.

Your Draglines, Shovels and Cranes are in the *Key Spots* where profit begins. Often the speed of the whole job depends on them. You can't afford anything but the best for the heart of your job—make it a Northwest and you won't have to worry about output. Plan ahead to have one. Let us discuss it with you.

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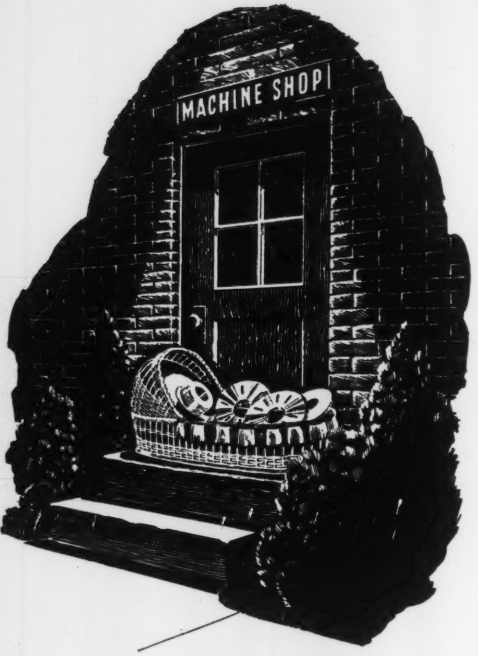


THE CASE OF THE Abandoned Orphan

Is the clutch in your equipment an abandoned orphan . . . deprived of its inheritance . . . with no home to turn to?

Then it's time to shift to Twin Disc . . . the clutch you'll never find abandoned like the one in the illustration. For every Twin Disc Clutch is backed by the same parental interest and responsibility that have distinguished the products built by Twin Disc for the past 31 years.

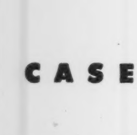
Ample parts stocks and trained mechanics in the 5 Branch Offices and 47 Twin Disc Parts Stations assure prompt service. Exceptional demands can be met by over-night shipments from the factory or from one of the five factory branches, where perpetual inventories are maintained . . . eliminating the need for costly made-to-order parts for original installations or subsequent parts replacements.

These are the reasons why manufacturers continue to standardize on Twin Disc Clutches year after year, and why they are preferred by owners and operators of all types of power-driven equipment.

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin (Hydraulic Division, Rockford, Illinois).

Hydraulic Torque Converter

Reduction Gear



TWIN DISC
CLUTCHES AND HYDRAULIC DRIVES
REG. U. S. PAT. OFF.

Hydraulic Coupling

Tractor Clutch

Marine Gear

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You engage special skills when ALLIED goes to work on your

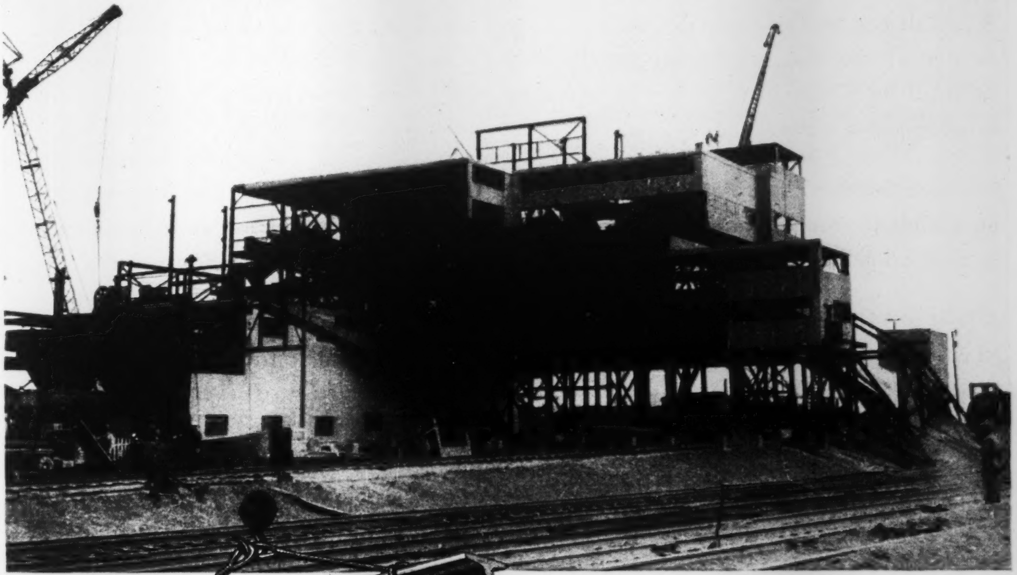
Fabricated Structural Steel

WE'VE often mentioned our three plants, fully equipped to fabricate steel *quickly*. We also offer the *technical ability* to turn out jobs economically and well.

Engineering Divisions are manned by experts in estimating and translating plans into shop layouts. Their precision short cuts bring you substantial savings.

Welding Engineers, with long experience in Allied shops, apply the latest techniques. *Riveters* bring new "know-how" to "buttoning up" and strengthening critical areas. Efficient scheduling of work flow by *Production Managers* assures steel on the site to meet erection schedules.

These skills are yours on small jobs, or big ones requiring more than ordinary ingenuity.



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▲ Steel for the great Ceredo Coal Preparation Plant of Truax-Traer Coal Company was fabricated by Allied.

ALLIED STRUCTURAL STEEL COMPANIES
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136 Euclids

● Euclids are working round-the-clock at Garrison Dam, the world's largest rolled fill, located on the Missouri River in North Dakota. The project is being built under supervision of the Corps of Engineers to eliminate destructive floods and provide water for irrigation and power.

Garrison Builders, Inc., Peter Kiewit Sons' Co. and Morrison-Knudsen Co. standardized on Euclids for the Stage I and II contracts on this tremendous job which will require a total of 86 million cu. yds. of excavation, 75 million cu. yds. for the embankment alone.

A fleet of 118 Bottom-Dumps is loaded by 7 Euclid Loaders, large draglines, and shovels. Heavy excavation is hauled by 8 Rear-Dumps of 15 to 22-ton capacity—3 Euclid Water Wagons of 10,000-gallon capacity each provide moisture for fill compaction and haul road maintenance. The "Eucs" haul all types of material . . . rock, sand, top soil, gravel, and clay . . . at speeds up to 32.6 m.p.h. on hauls up to 3 miles long.

Yes, Euclid equipment is making earth moving history at Garrison—and it can move more dirt at lower cost for you, too. Write today for literature or see your nearest Euclid Distributor.

THE EUCLID ROAD MACHINERY CO. **CLEVELAND 17, OHIO**

CABLE ADDRESS: YUKLID

EUCLID
THE PIONEER

EUCLIDS

GARRISON DAM!

THE WORLD'S LARGEST ROLLED FILL DAM!

Euclid Loader delivers 25 bank yds. of fill material in less than a minute into the big Bottom-Dumps. Peter Kiewit Sons' Co. and Morrison-Knudson Co. are using 5 Loaders and 66 of these Model LDT "Eucs" to move the bulk of the earth and gravel on their 20,000,000 yd. contract.

"Eucs" of 13 cu. yd. struck capacity receive heaped loads of heavy clay and shale in about 40 seconds. Garrison Builders, Inc., a combine of three well-known Tennessee contractors, are completing their 14,000,000 yd. contract for Stage I construction.

Powered by 300 h.p. Butane engines, the Bottom-Dump Euclids have plenty of power to move payloads up to 40 tons at high speed on long hauls from borrow pits to the fill. Clean, non-stop dumping saves time and increases production of the hauling fleet.

Move the Earth

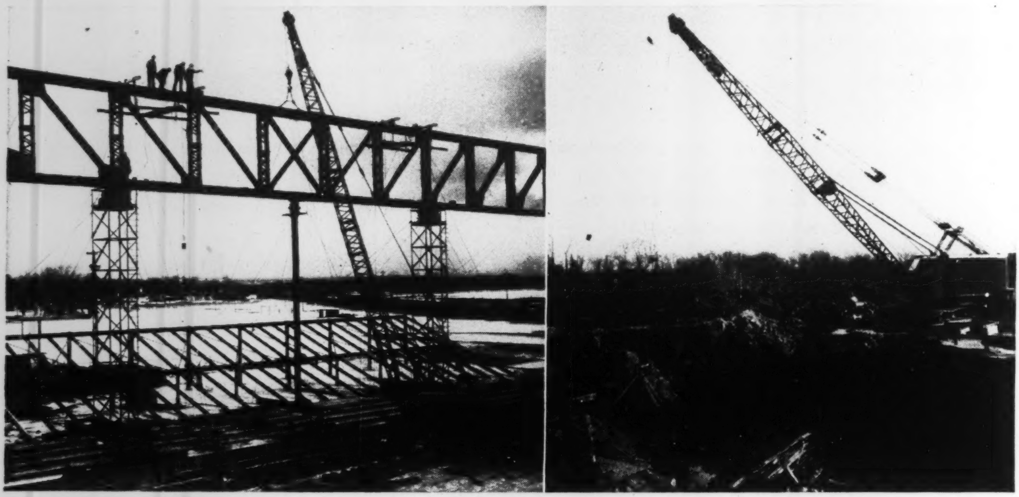
BAY CITY MODEL 650

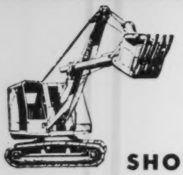
20 ton Crane handles a variety of jobs...QUICKLY!

Like an all-around athlete, the heavy duty BAY CITY Model 650 always turns in a top performance . . . no matter what the job! Below are two 20 ton cranes, photographed during their profit-making performances on widely different jobs — one, handling structural steel; the other, heavy clam shell work.

Their efficiency is achieved through an exclusive boom construction of tougher, lighter alloy steels that handles bigger pay loads. New speed and smooth operation is a result of the independent self-locking worm and worm wheel boom hoist that runs entirely enclosed in oil. The boom, working up and down only under power, affords extra safety.

The BAY CITY Model 650 is readily convertible for crane, clamshell, dragline, general excavating or hoe operation. Features like: E-Z operated quick-responding booster clutches with simplified, centralized controls; anti-friction bearings throughout, even to boom point sheaves; helical gears for quiet running; and, a dozen other superiorities have operators saying, "BAY CITY is the BEST BUY!" For more information write us today.





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BAY CITY SHOVELS INC., BAY CITY, MICHIGAN See your nearest Bay City dealer for excavating and material handling equipment in sizes from ⅜ to 1¼ yard with crane rating up to 20 tons. Both crawler and pneumatic tire mountings.

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new BIG YELLOW ENGINES BUILT TO HANDLE BIG JOBS

Men who use construction machinery have learned from long experience that they can depend on "Caterpillar" Diesel power. On thousands of tough jobs all over the world, the big yellow engines have proved their outstanding performance.

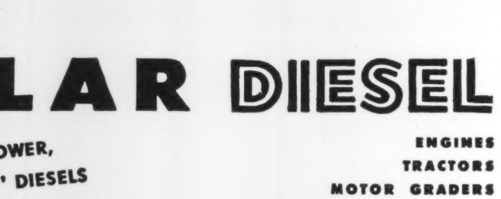
Now you can power larger machines—shovels, draglines, ditchers, hot-mix plants, dredges, crushers and gravel plants—with new, bigger "Cat" Engines.

In addition to present models are four great new "Caterpillar" Diesels, ranging up to 500 hp., now coming out of the world's finest, most modern engine plant. Every one of them is built with true "Caterpillar" long life and dependability. Every one is designed to burn low-cost, non-premium fuels, giving you substantial savings. Every one receives a closely supervised dynamometer run to assure proper break-in and full horsepower output.

The same advantages are offered by the four big new "Caterpillar" Diesel Electric Sets, generating up to 314 kw.

When you buy new construction machinery, specify "Caterpillar" Diesels for power. And when you consider replacing the power in present equipment, call on your reliable "Caterpillar" dealer.

CATERPILLAR TRACTOR CO. • PEORIA, ILLINOIS



More and bigger engines are now being built in this mammoth "Caterpillar" factory—the most modern, most efficient engine plant in the world.

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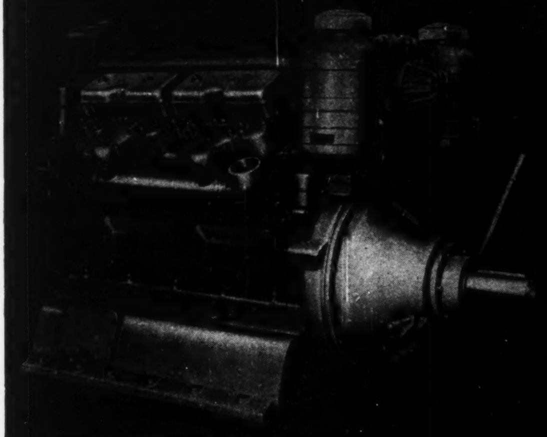
WHEN YOU THINK OF DEPENDABLE POWER,
THINK OF BIG YELLOW "CATERPILLAR" DIESELS

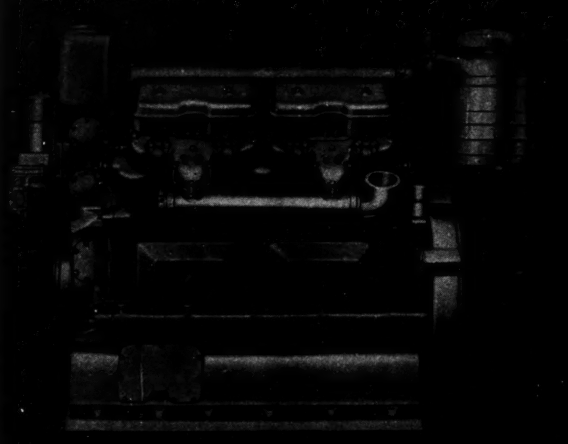
ENGINES
TRACTORS
MOTOR GRADERS
EARTHMOVING EQUIPMENT

THE NEW D397 ENGINE DELIVERS
A MAXIMUM OF 500 HORSEPOWER.

THE NEW D386 ENGINE, DELIVERING
400 MAXIMUM HORSEPOWER.



THIS NEW ENGINE, THE D375, DEVELOPS
335 MAXIMUM HORSEPOWER.



THE NEW D364 ENGINE, WITH
265 MAXIMUM HORSEPOWER.

CATERPILLAR TRACTOR CO.
DEPT. EN-8, PEORIA, ILLINOIS

Please send me full specifications on the new "Caterpillar" Diesel Engines and Electric Sets.

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CITY________________________ STATE____________

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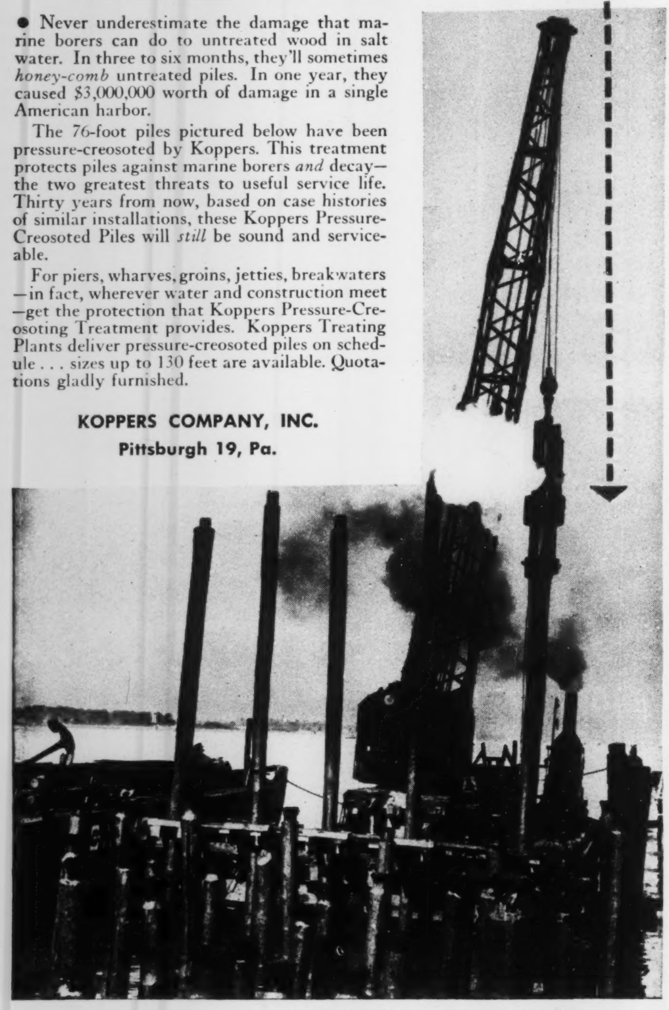
THEY'RE KOPPERS PRESSURE-CREOSOTED PILES

● Never underestimate the damage that marine borers can do to untreated wood in salt water. In three to six months, they'll sometimes *honey-comb* untreated piles. In one year, they caused $3,000,000 worth of damage in a single American harbor.

The 76-foot piles pictured below have been pressure-creosoted by Koppers. This treatment protects piles against marine borers *and* decay—the two greatest threats to useful service life. Thirty years from now, based on case histories of similar installations, these Koppers Pressure-Creosoted Piles will *still* be sound and serviceable.

For piers, wharves, groins, jetties, breakwaters—in fact, wherever water and construction meet—get the protection that Koppers Pressure-Creosoting Treatment provides. Koppers Treating Plants deliver pressure-creosoted piles on schedule . . . sizes up to 130 feet are available. Quotations gladly furnished.

KOPPERS COMPANY, INC.
Pittsburgh 19, Pa.



Foundation piles being driven for the 150-foot extension of the U. S. Coast Guard pier at Charleston, S. C.

KOPPERS PRESSURE-TREATED WOOD

NEWS BRIEFS

Real Cost Cutting—Because it costs only half as much to move a 104-year-old church 115 miles as it would to build a new one, the Brookfield, Vt., Congregational Church is to be dismantled this summer and re-erected at Lordship, Conn. Wooden pegs will be knocked out of the century-old timbers and the knocked-down structure moved in 12 trailers. The job will cost $35,000.

Not Where You'd Think—Coastal and tidewater counties generally have the fewest of the 9,000 bridges on Virginia's state highway system. There is an average of one bridge 20 or more feet in length for every five miles of the system, and "half as many more" under 20 ft., the Highway Department reports.

Comin' Round the Mountain—Pennsylvania Railroad will eliminate a tunnel near Bowerstown, O., by relocating 11 miles of double track. A mile of state highway also must be relocated, and two bridges will be built to eliminate grade crossings. It's a $3,000,000 job.

Boston Cleans Up—The Massachusetts legislature has ok'd a bill permitting Boston to erect a $12,000,000 sewage disposal plant and to relieve pollution conditions in Quincy Bay. The city has until 1955 to complete the work.

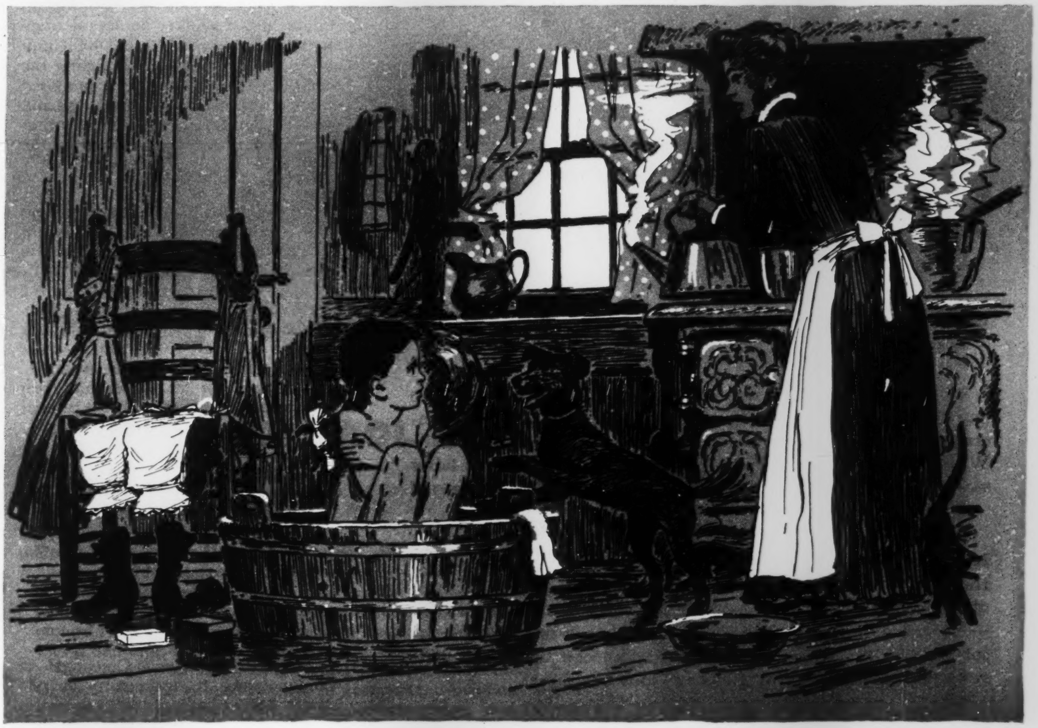
Didn't Take Long—The $10,000,000 O'Sullivan Dam, on the Columbia Basin Project in eastern Washington, has been completed in a little more than two and one-half years. Contractors Lytle, Amis & Green had been allowed four years for the job.

Housing Law At Work—New York City has selected its first project under the new federal housing law—the St. Nicholas Houses in upper Manhattan. It filed an application for a financial assistance contract last week, and asked PHA to allocate 20,300 apartments to the city for the first two years under the new program. The St. Nicholas project will have about 880 apartments in seven 14-story buildings, ranging from West 127th to 129th Streets between Seventh and Eighth Avenues.

Most Beautiful Capital Dept.—Nashville is planning the expenditure of as much as $20,000,000 to remake

(*Continued on page 14*)

"Stop shivering, Ruth! I'll have some more water hot in a minute"



Fifty years ago, a tea-kettle provided hot water for the Saturday night bath in many homes. Today, over 12 million automatic gas water heaters are in use and 21 million homes are served by gas for cooking, refrigeration and heating. The extraordinary growth and expanded availability of gas service is a notable contribution to better living in America.

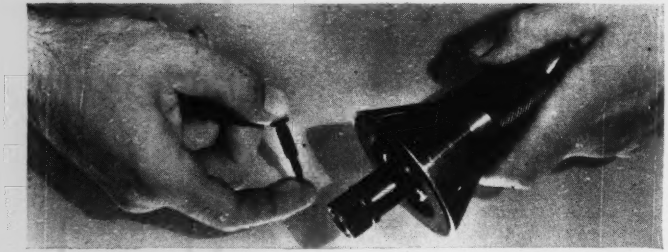
Water supply and sanitation have also made remarkable progress in the half-century since 1899, the year our Company was organized. Today, more than 12,000 water works permit inside plumbing and furnish a dependable supply of safe, potable water, for 85 million people. Over 6,000 sewage treatment plants, now in operation, help protect the health of more than half of our urban population.

For 50 years we have been the largest producer of cast iron pressure pipe and fittings for these public services, so vital to better health and living. We are happy to have contributed to some extent to their progress. As to progress on our account—in manufacturing methods, production standards and quality controls—let our present product speak for itself.

To those responsible for the great progress in water supply, gas and sanitation service and their contribution to better health and living over the past fifty years, America pays tribute.

U.S.
CAST IRON
PIPE

1899-1949
U. S. Pipe & Foundry Co.
Makers for 50 years of cast iron pipe for water, gas and sewerage service. General Offices: Burlington, N.J.



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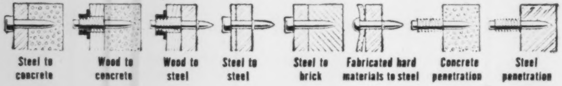

LET US ANALYZE YOUR FASTENING COSTS

Ask for 15-minute demonstration of RAMSET SYSTEM. We'll show you how you can do your work faster, better and at amazingly lower cost. No obligation—just mail the coupon for details. *Stemco Corporation, Cleveland 16, Ohio.*

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Stemco Corporation,
Cleveland 16, Ohio
Please send details and arrange for demonstration of RAMSET FASTENING SYSTEM and how it will save time and cut our costs.
Name
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itself into one of the nation's most beautiful capitals. Mayor Thomas L. Cummings and administration leaders announced the program recently as a long-range undertaking which would enlist city, state and federal financial resources. Keystone of the program would be a four-lane boulevard originating at a proposed $2,000,000 Cumberland River bridge and circling the capitol to connect with a proposed express-way. State office buildings and new housing would be erected within the semi-circle to be described by the boulevard. The area is now a slum.

Illinois Road Costs Down—Illinois joins the parade of those who report lowered highway construction costs in the first half of 1949.

Total of apparent low bids during the first six months, according to Public Works and Buildings Director Charles P. Casey, is $2,000,000—more than 12 percent—below state estimates. A summary for an earlier half year showed contracts were only 0.4 percent below estimates.

Pay Raises Refused—There won't be any salary increases this year for 1,700 New York State engineers. Raises ranging from $700 to $1,700 were denied by the state's salary standardization board. Its director said the turn-down was based on a study of salaries in industry.

Didn't Cost Much—Convicted of confederating to intimidate and do bodily harm to a Bardstown contractor who was beaten insensible, a Lexington, Ky., union leader was fined $100 recently by a Kentucky court. Several other charges remain to be tried. The assaults grew out of an attempt by two contractors to get work going again on a halted road job.

Maryland Plans Airports—Maryland's Aviation and Planning Commissions have started a joint program to develop a master airport plan for the state. They think it will help other state and local agencies, business groups and the public at large. Studies will cover land use, rail and air transport, feeder lines, marketing areas, aircraft and airport distribution within the state and potential airport sites.

Chicago Gets Helioport—An inch-thick asphalt coat has been applied to 23,400 sq. ft. of the Chicago post-office roof to provide a landing place for helicopters which will ferry mail between the airport and downtown.

NEW G-E CONTROL CENTER

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Standardized, self-enclosed starter units make building-on easy— As your system expands, these new motor-starting units can be replaced easily with larger ones because widths are uniform, heights proportionate. Complete new sections can be added alongside, or backed-up to, existing sections. Front-connected wiring and snap-on contacts make installation and servicing easy.

Development of this control center is yet another proof that General Electric keeps abreast of commercial-building needs with complete electric equipment for elevator, pump and blower drives—power distribution and conversion purposes. Your nearest G-E sales office will have an application engineer help you plan your entire system. Also, write for Bulletin GEA-4979, "New G-E Motor Control Center." ***Apparatus Dept., General Electric Co., Schenectady, N. Y.***

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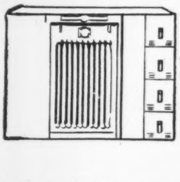
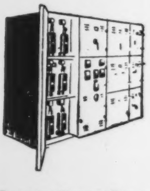
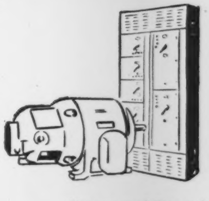


Power-distribution Systems



Rectifiers for Power Conversion



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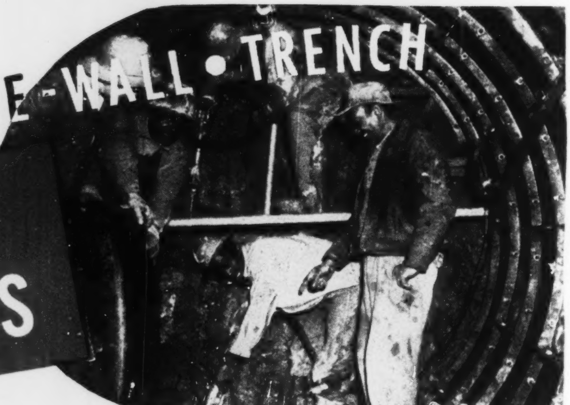
OVER-HEAD • SIDE-WALL • TRENCH



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The powerful "18" and "19" tools are built with famous Thor Short-Travel Tubular Valve, Latch-Type Steel Retainer; can also be fitted with ax blade for timber and hitch cutting, or with moil point for light pavement breaking.

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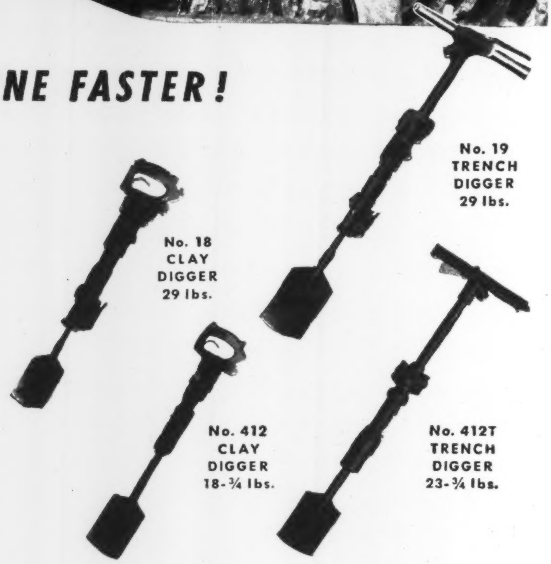
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No. 18 CLAY DIGGER 29 lbs.
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No. 412T TRENCH DIGGER 23-¾ lbs.

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THE CONSTRUCTION WEEK

LABOR REASONING—Something of what's behind construction labor's move to revive its jurisdictional disputes arbitration machinery (ENR July 21, p. 25) became apparent last week. Addressing the Building Industry Employers' conference at Lake Placid, N. Y., Richard J. Gray, president of the AFL's Building Trades Department, sounded a warning against "hasty" filing of complaints with the National Labor Relations Board. Obviously foreseeing widespread resort by employers to machinery of the Taft-Hartley Act for relief from work-stopping jurisdictional arguments, Gray warned the contractors that "chaos" would result in the industry from too hasty use of NLRB services. He added that one of the reasons the building trades originally abrogated the agreement was that the unions believed some employers were urging resort to NLRB over the head of the arbitration machinery.

FOURTH ROUND HOLDUP—On the subject of labor, observers are placing cautious bets that there won't be any general strikes for fourth-round increases—at least until the outcome of the steel dispute fact-finding is known. The pundits point out that too many strikes have been lost already, and management's resistance to further wage boosts, in the face of falling demand and steadying prices, has convinced labor policymakers that this is a time for "wait and see."

CEMENT GETS CUSTOMERS — Some cement makers are jumping the gun, in a way, on expected easing of current restrictions on basing-point prices. They are already absorbing freight costs to extend their markets to customers they were forced to abandon when the Supreme Court outlawed the basing point set up. Although neither the companies nor their biggest customers—the contractors—want to discuss the matter for publication, it's well known that the cement companies are out beating the bushes for a new hold in the territories they formerly served. Some falling off in business, as compared with 1948, is stimulating the move.

BUSINESS PRACTICES—The claim that some price discrimination—that is, not giving all customers an even break—was in reality meeting competition in good faith, apparently won't be quite enough to clear a manufacturer when the Senate and House finally get together on a new delivered-pricing law. The nub of the fight in both branches, as they considered Senator O'Mahoney's bill (ENR July 14, p. 23), was on this point. Both House and Senate versions agree that "meeting competition in good faith" should not be a complete defense against a charge of price discrimination. Both versions of the legislation say that where the effect of a seller meeting a competitor's price results in less competition, the Federal Trade Commission may issue a cease-and-desist order against the practice.

SECRECY PAYS—Spotting what it thought was a trend whereby local contractors waited for the state's estimate on cost of proposed road jobs, then bid on that basis, Ohio's highway department decided on a drastic remedy—no more announcement of state estimates. Results, according to T. J. Kauer, director, were: More active bidding, lower bids. Examples, from a July 19 letting, included: A low bid of $91,174 for a resurfacing job the state's engineers thought would cost $126,400; a $55,584 bid for a job the state estimated would cost $64,000.

LOYALTY CHECK—Many a construction worker —employed by private contractors on government work—is undergoing thorough investigation by the military today. Most of them aren't guilty of anything—the government is just being careful, because it feels that military security is as important now as in wartime. A recent recapitulation shows that only about 11 workers out of 3,000 are ever asked to explain "derogatory information", and of these, only a few have been denied the right to work on classified projects. Even an adverse report by the Army's investigative bodies doesn't mean the worker can't be employed—it only means he can't be employed on the specific secret work the Army is worried about.

MONEY MARKET—There should be more money available to finance municipal, state and private construction programs. The reason is the cheap money policy which the Federal Reserve Board promulgated a month or so ago, when it relaxed the ceilings on government security prices. That policy was cinched last week when the Treasury went back into the deficit financing business. It announced plans to sell $1 billion in 91-day bills this week. Proceeds will go to retire an $810 million issue coming due and to supply $200 million in cash.

You Don't Need to Keep your Fingers Crossed with Chlorination by W & T

Keeping fingers crossed over the dependability of chlorinating equipment is something that engineers who demand W&T Chlorinators can forget. They know they can forego the time honored symbol of hope-with-uncertainty and go on to other problems without worry or risk. Here's how they figure it.

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W&T has over 35 years' experience in solving all types of chlorination problems.

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W&T has a large, precision machine shop which understands, from long experience, the exacting nature of chlorinator manufacturing.

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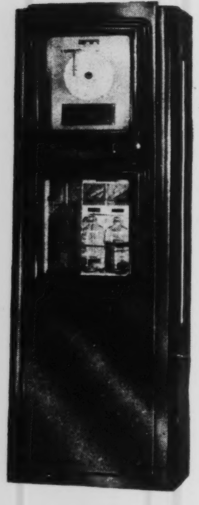
Thus, the engineers who say "W&T Chlorinators" know they have experience, dependability and sound theory behind their decision.

You'll find your W&T Representative willing and helpful on *your* chlorination problems, too. Why not call on him for your next job—instead of crossing your fingers?



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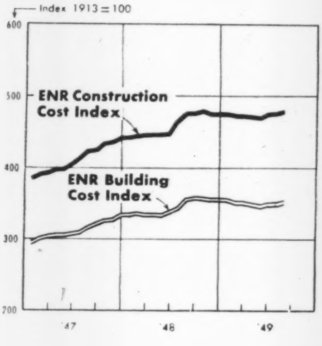
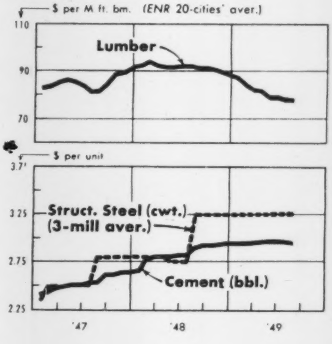
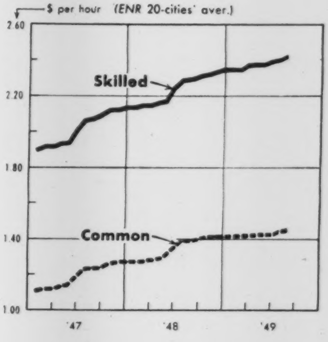
S-45

AUGUST CONSTRUCTION BUSINESS REPORT







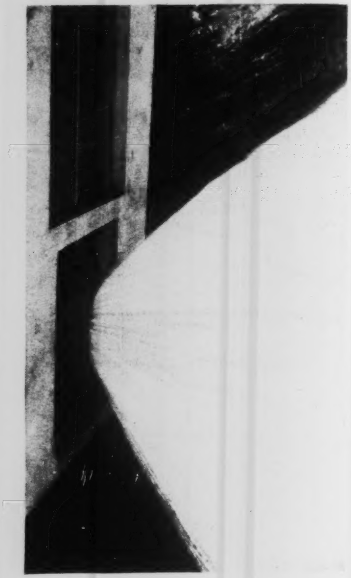
ENR INDEXES (1913 = 100)	Aug. '49	July '49	% Change	Aug. '48	% Change
Construction Cost	478.28	477.46	+0.2	477.11	+0.2
Building Cost	350.72	349.39	+0.4	355.42	−1.3
MATERIAL PRICES (20-cities' average)					
Cement, bulk, per bbl	2.950	$2.960	−0.3	2.920	+1.0
Structural Steel, (3-mill aver.), per cwt	3.250	3.250	0.0	3.250	0.0
Sand, per ton	1.981	1.978	+0.2	1.950	+1.6
Lumber, 2x4 Fir, per M ft. bm	85.691	85.073	+0.7	99.440	−13.8
Lumber, 2x4 Pine, M. ft. bm	72.946	73.446	−0.7	86.470	−15.6
Common brick, per M	27.793	27.693	+0.4	26.563	+4.6
Ready-mixed concrete, per c. y	10.181	10.207	−0.3	10.027	+1.5
Structural Clay Tile, 3x12x12 per M	131.858	131.983	−0.1	126.900	+3.9
WAGE RATES (20-cities average)					
Common	1.470	1.465	+0.3	1.394	+5.5
Skilled (aver. 3 trades)	2.434	2.412	+0.9	2.298	+5.9
Bricklayers	2.672	2.629	+1.6	2.504	+6.7
Structural Ironworkers	2.404	2.382	+0.9	2.290	+4.9
Carpenters	2.229	2.224	+0.2	2.124	+4.9

	July			Seven Months		
CONTRACTS AWARDED (thous.)	1949 (4-weeks)	1948 (5-weeks)	% Change†	1949 (30-weeks)	1948 (31-weeks)	% Change†
Total U. S. (ENR reported)	619,442	713,719	+ 8	4,579,411	4,047,088	+17
Private	221,502	357,495	−23	2,133,998	1,981,865	+11
Public	397,940	356,224	+40	2,445,413	2,065,223	+22
Federal	105,839	74,886	+77	660,932	602,049	+13
ENR Const. Volume Index, '13 = 100	280	265	+ 6	277	252	+10
NEW CONSTRUCTION CAPITAL						
Total	452,463	2,603,923	−78‡	3,124,661	4,428,196	−27‡
State & Municipal Bond Sales	232,091	240,309	+21	1,627,247	1,092,291	+54
Corporate Security Sales	220,372	377,393	−27	1,497,414	1,349,684	+15
Federal (non-federal work)	‡	427,289	....	‡	427,289	....
Federal (federal work)	‡	1,558,932	....	‡	1,558,932	....

‡No Fed. Approp. 1949 to date.

MATERIAL SHIPMENTS & LABOR SUPPLY	June (J) May (M) 1949	1948	% Change	Six Months Five Months 1949	1948	% Change
Cement, thous. bbls., Bu. of Mines	19,426 (M)	19,544 (M)	− 1	69,634 (5)	70,091 (5)	− 1
Fabr. Struct. Steel, thous. tons, AISC	164 (J)	157 (J)	+ 4	998* (6)	966 (6)	+ 3
Lumber, mil. ft. bm., NLMA	2,654 (M)	3,076 (M)	−14	11,933 (5)	14,505 (5)	−18
Lumber Prod., mil. ft. bm., NLMA	2,731 (M)	3,087 (M)	−12	12,272 (5)	14,343 (5)	−14
Contract Const. Employ., thous., BLS	2,081 (J)	2,173 (J)	− 4	1,924 (6)	1,847 (6)	+ 4

*Revised. †Computed on weekly average basis.



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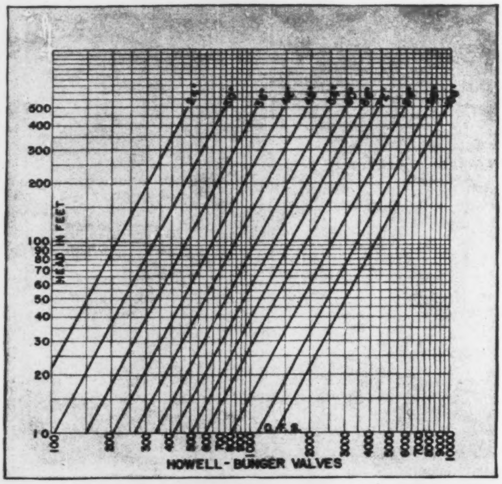

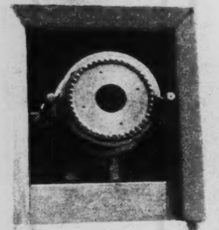

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EDITORIALS

Overtime Is Overtime

CONGRESS DESERVES CREDIT for taking an action that will aid in cutting the cost of construction. The praiseworthy deed resides in passage of the bill that defines overtime on construction, contrary to a recent ruling of the Supreme Court that held that extra pay for working nights, Sundays and other unusual hours did not constitute overtime pay. Under the court ruling, workers who were paid extra for a holiday or a night shift were entitled to "overtime on overtime" if they worked more than 40 hours during the week.

Here, obviously was a new and unjustified cost to be added to the price of every structure. The new bill signed last week by the President says that any work at unusual hours is overtime, and that pay for it can be credited toward any overtime pay due under the Wage-Hour Law. Even though passage of the bill probably was possible only because the unions supported it, the construction industry and the purchasers of construction can be thankful for the favor, however it may have come about.

Engaging Engineering Services

A BRAVE FIRST STEP toward improving a confused situation with respect to contracting for engineering services was taken by the Board of Direction of the American Society of Civil Engineers at its recent Mexico City meeting. It instructed the Committee on Professional Conduct to prepare a revision to the code of ethics that will "effectively prohibit competitive bidding on a price basis by professional engineers" as a means of securing contracts for their services.

Both the intent and the wording of the instructions are important. The intent is to put some teeth in a code of ethics that has never listed competitive bidding as unprofessional conduct, although it has been widely so regarded. The wording that is important resides in the phrase "on a price basis."

Acknowledgment that it is only price competition and not competition in the broadest sense that is in question clarifies the issue immensely. It leaves competition on a basis of qualifications out of the picture, and by inference gives it a clear bill of health, as is proper. The consultants who can sit back and wait for clients to come to their door today are the exception, not the rule. The great majority must compete for the business that they get, and it is a constructive move for the engineers themselves to acknowledge this fact of business life.

This subject of bidding for professional services has been discussed in these columns several times during the past year. Indeed it was these discussions that precipitated the action just taken by the ASCE directors. It was our contention that instances of bidding for professional engineering contracts were on the increase, and that if those engineers who regarded such practices as undesirable and unprofessional did not oppose them more voluably and purposefully this tenet of professional conduct was in danger of being lost by default. Arousing no interest by this warning, the next step was to propose a method of competitive bidding that seemed to safeguard the interests of engineer and client alike. The action of the ASCE directors opposing competitive bidding on a price basis followed.

The action should be welcome to all who have the best interests of the profession at heart. It develops a favorable climate in which consulting engineers can examine their beliefs and state their views on a most important aspect of engineering business. And it opens up an opportunity to develop a case against price-bidding as being opposed to the best interests of the client. It is on this basis, and not upon moral grounds, that price competition for engineering service is a proper subject for consideration in a code of ethics.

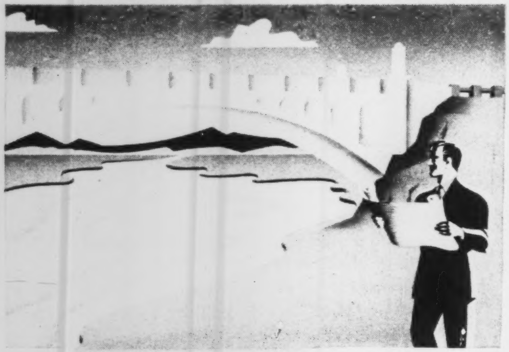
Merely writing a restriction against price bidding into the code of ethics will not, of course, dispose of the practice. There must be a spirit of willingness on the part of engineers to abide by the rules that is evident for all purchasers of engineering services to see. If there is not, calls for bids, even shopping for cut-price bids, will continue to increase. What the proposed ASCE code revision says, and how it is accepted and enforced are all important.

Building False Hopes

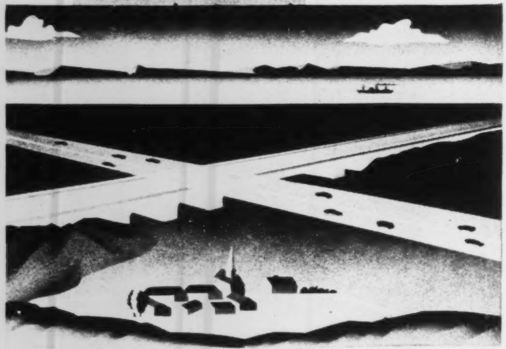
THE ECONOMICS EXPANSION BILL that the Truman Administration is expected to introduce in Congress soon (ENR July 21, p. 26) is understood to have provisions for loans to state and local governments for advance planning of public works (which is good) and grants to assist in getting the projects under way when needed (which is bad because of the present high state of solvency of most governmental units). Seeing the possibility of rising unemployment, the President's economic advisors are beginning to look for ways to stimulate employment, and more public construction is one of the more obvious means.

But those public agencies that have advance planning under way or are seeking to start should not stop work in the hope of getting loans from Congress soon. In the first place, Congress is seeking methods to cut expenditures, not expand them. And in the second place, a lot of opposition can be expected to the provisions of the bill designed to stimulate private industrial expansion. Hopes for federal aid money, therefore, should not be built too high.

TO SPAN A RIVER...



...OR OVERPASS A HIGHWAY



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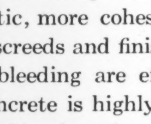


NBC SUMMER SYMPHONY CONCERTS—*Sponsored by U. S. Steel Subsidiaries—Sunday Evenings—June to September*

ENGINEERING NEWS-RECORD

AUGUST 4, 1949 VOL. 143 NO. 5

Housing authorities face $5 billion home program

If all authorizations under the new housing act are used fully, federal financial aid could support local expenditures exceeding $6.8 billion—Basic loan principles the same as in 1937 act

Construction contracts amounting to almost $5 billion may be signed by local authorities during the next six years. And if full use is made of authorized federal assistance, the resulting government expenditures could support local spending in excess of $6.8 billion.

That's the volume of building work which could flow from the Housing Act of 1949. How are the local housing authorities going to go about it?

Basically, the principles of the new low-rent program are the same as those established in the 1937 act.

Under that law, local authorities built and now operate more than 190,000 low-rent dwelling in 268 localities.

Must have an authority

There must be a local authority to get in the program. So far, there are such authorities active today that have had experience under the 1937 act or on war housing. These serve 582 localities, 86 percent of which have less than 100,000 people. On paper, another 200 authorities exist, which are without experience. New authorities will be organized for the new program—some of them to serve rural non-farm areas.

Local housing authorities are legal in 42 states, the District of Columbia and the four off-shore areas. There is no state law authorizing them in Iowa, Kansas, Oklahoma, South Dakota, Utah and Wyoming.

Initiative for starting a project must be local. And the authority first must demonstrate the need for low-rent housing in its area. Having done so, it can get federal loans and commitments for financial help. Then the local agency builds the project and operates it. The authority has to carry the ball every step of the way.

Federal assistance may come as a loan or as an annual contribution. Loans may be had for preliminary expenses, or if private investors don't buy an authority's bonds. Annual contributions are made to offset the gap between a project's rental income and yearly costs—until a project is amortized, but not for more than 40 years. Public Housing Administration handles the federal responsibilities of making loans, paying the annual contribution and checking local actions for legality.

The process starts with a local determination of need. This goes to PHA with a request for a "program reservation," which PHA can grant by earmarking some units for the request. If there's proof of need and of a failure of private homebuilders to meet it, PHA makes a small preliminary planning loan, whose application must be approved by the local governing body.

The authority then selects its site, has it appraised, engages architects and engineers and agrees with local government on tax exemption, payments in lieu of taxes and—if necessary—elimination of substandard dwellings.

Ordinarily, the authority will sell temporary notes to private investors for the initial development capital. With the PHA backing that's available, such notes have been selling at less than 1 percent. Such notes are retired when permanent financing arises—generally by long-term serial bonds. These are secured by the federal pledge of annual contributions.

Today, they should sell at 1.5 to 1.75 percent, the Housing and Home Finance Agency estimates. The maturity plan permits equal debt service payments each year. The level is set at just about the level of the annual federal contribution, would be 4.5 percent of a project's cost. Federal assistance stops when a project is amortized, or at 40 years.

The new act authorizes PHA to lend up to $1.5 billion. While the first purpose of this authorization is for preliminary loans and short-term notes, it may be used to buy bonds which can't be sold publicly. All loans under the authorization are to be repaid in full, with interest. Annual contributions beyond the loans are limited to $308 million yearly for 40 years—a potential of $12.3 billion.

Actually, the law restricts annual subsidy payments to the amount needed by the low-rent housing projects.

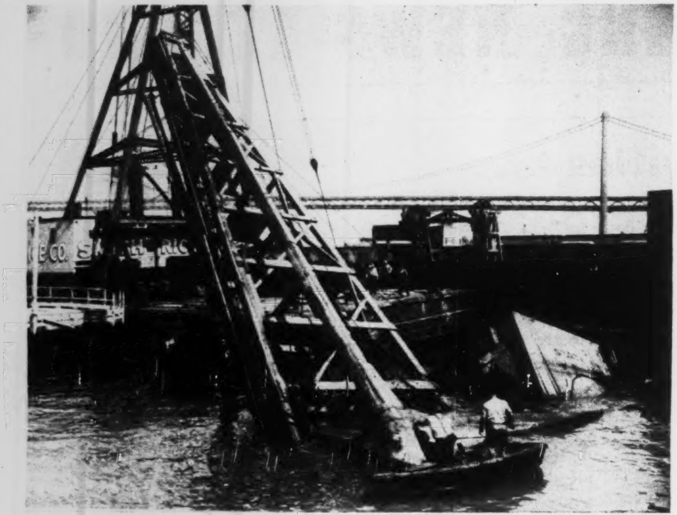
For the full life of the expanded program now starting, HHFA estimates that subsidy payments will amount to between $7 and $8 billion. That will be the general contribution to the 810,000 housing units authorized by the new act. Again, according to HHFA, contributions by local governments—less payments in lieu of taxes—will average about half the federal subsidy over the life of a project.

Pipe patentees accept consent decree

Attorney General Tom C. Clark announced recently that three manufacturers of cast-iron pressure pipe had consented to a court judgment ordering dissolution of their jointly-owned patent-holding subsidiary, Sand Spun Patents Corp., Philadelphia. The decree releases 19 patents for public use, without payment of any royalty. It also cancels any existing patent license agreements among the defendants and enjoins them from making any similar agreements in the future.

Manufacturers named in the order are the American Cast Iron Pipe Co., Birmingham, Ala.; the Florence Pipe Foundry and Machine Co., Florence, N. J.; and the Warren Foundry & Pipe Co., Phillipsburg, N. J. The judgment was handed down by Federal District Judge Philip Forman at Trenton, N. J. The complaint had been filed last February by the Antitrust Division of the Justice Dept.

The department charged the defendants with pooling their control of important patents to restrain illegally the manufacture of cast-iron pressure pipe.



THE WASH OF A SAN FRANCISCO BAY SIDE-WHEELER ferry boat tipped over this 65-ft. floating pile driver one night recently. The rig, built by the California Harbor Commission and mounted on a 22 x 60 ft. barge, was tied to a San Francisco wharf at the time. Righted by a 100-ton derrick and pumped dry, the driver was ready to go back to work in a week.

Robert B. Marshall dies; father of Central Valley

Robert Bradford Marshall, father of California's $440,000,000 Central Valleys Project, died recently in San Francisco at 82. He saw realized a dream he had fought for since the 1890's.

A direct descendant of Chief Justice Marshall, Col. Marshall went to California in 1891 as a topographer for the U. S. Geological Survey. There he saw the paradox of millions of fertile acres lying parched in the summer which might be saved by the millions of acre feet of water flowing unused into the Pacific during the winter and spring. He spent the next 30 years gathering the engineering data necessary to make real his plan of storing in dams the rain waters of the Sacramento, San Joaquin, and Santa Clara valleys and of Southern California.

In 1919, he turned his plan over to the state and resigned as chief geographer in the United States to devote his full time to fighting for the project. In face of scorn and ridicule, he succeeded in getting from the legislature a $200,000 appropriation for the state engineer to make preliminary studies. During the next 12 years, more than $1,000,000 was spent investigating the feasibility of the proposal. Finally in 1944, Col. Marshall saw water pouring through the giant Shasta Dam, which had been built basically as he had planned it. The Friant Dam also followed his original conception.

Col. Marshall retired in 1938 from the state division of highways for which he had worked for several years. Following his death, the California Assembly adopted a resolution acknowledging the state's debt to Col. Marshall "for his vast contributions to the development of the wealth and heritage of this State."

◆

Telegraphic bid garbled, affidavit unsnarls mix-up

Pinker Construction Co., of Cincinnati, O., was awarded a $620,400 contract for construction of pumping plants for the Army Engineers at Newport, Ky.—but it took some affidavits from Western Union to get it.

Vest & Bartell, also of Cincinnati, appeared to be low bidders at $634,700. But on the morning of bidding, Pinker revised its estimate downward, sending its new bid via Western Union. The message was garbled, making it appear that Vest & Bartell were low. The affidavits from Western Union established Pinker's case.

State, local road groups share radio frequencies

Short-wave radio communication for state, county and municipal highway departments ranks with such other public safety services as police, fire and forest conservation services under new revision of Federal Communication Commission regulations.

Effective this month, FCC has made both emergency and operational use of short-wave by highway departments a service with its own wave bands, no longer restricted to emergency service use. Highway departments now may employ short-wave not only for "communications directly relating to public safety and the protection of life or property" but as well for "communications essential to official activities directly relating to the maintenance, supervision and operation of public highways."

More than 16 frequencies have been allocated for highway department use. These are to be shared geographically on a non-interference basis. Frequencies in the 46-47 mc. band will be assigned only in accordance with a geographical assignment plan. Such a distribution plan is now being worked out by the committee on radio use of the American Association of State Highway Officials. It will be distributed after approval by FCC.

◆

City, state seek an end to Puget Sound pollution

Technical staffs of the Washington Pollution Control Commission and the Seattle Health Department will attempt to settle their controversy over Seattle's sewage disposal problem this summer. The two staffs will work out a set of standards based on Public Health Service rules.

The commission contends that Puget Sound beaches have been polluted by the city's outfalls. The city denies it, and claims all but a part of one beach is safe for bathing. It's extending its outfalls, but the Commission doubts that this will do the job. Seattle's Mayor Devin says the Commission is attempting to force the city to install disposal plants. This charge Commission Director E. F. Eldridge denies, even though he insists that "Seattle should go on a planned sewage disposal program for its future needs."

Meanwhile, the Washington Pollution Abatement Council, composed primarily of sportsmens and fishing interests, has been organized to work against air, water and land pollution.

Montana stabilizes its economy as USBR builds two projects in state

Hungry Horse and Canyon Ferry dams assist state in holding its population, also—Power ownership fight offers complications

By Vincent B. Smith

Montana is stabilizing its economy and holding—or increasing—its half a million residents.

It's doing so with the assistance of the Reclamation Bureau, which recently began construction of the Canyon Ferry Dam, on the Missouri River near Helena It's the second large multiple-purpose project under construction in the state. Hungry Horse Dam, primarily a power project and a good deal larger than Canyon Ferry—which is primarily for irrigation—is the other.

Despite the present and future economic blessings which will flow from these two projects, not everything connected with them is serene in Montana.

Chiefly, there's a public vs. private power ownership fight attendant upon Canyon Ferry, and for the present, it's delaying the placing of contracts for power generating equipment to be installed at Canyon Ferry. Last year, Congress ordered that none of the project funds be spent for power. The same provision is in this year's bill, which is now before the Senate.

Reclamation has obtained a ruling from the Comptroller General permitting the construction of penstocks and powerhouse substructure before the site is watered, and they're included in the $12,000,000 contract which was let for the dam last April. By the schedule, Canyon Ferry should get a third of its 50,000 kw. plant on the line in 1953, the remainder in the following two years. But this capacity is apt to be delayed unless Congress writes different legislation than it yet has.

And if power be delayed, the accompanying irrigation will be, also.

Canyon Ferry is to be 172 ft. high, a concrete gravity dam. There'll be irrigation pumping to 500,000 acres, of which 200,000 will be new land. Much of the power will go to irrigation pumping during the season.

By contrast, Hungry Horse will be the fourth largest and fifth highest of the world's concrete dams, rising 520 ft. above bedrock. It will generate up to 300,000 kw., perhaps more, and the river regulation which will be had from its 3,000,000 acre-ft of live storage will add 600,000 kw. to the capability of downstream plants on the Columbia River. Its irrigation features are minor —perhaps 40,000 acres. It'll cost $100 million, Canyon Ferry only $30,000,000 complete with power.

The power ownership feud takes different—yet similar—forms at Hungry Horse and Canyon Ferry. West of the Continental Divide, private utilities are anxious to get Hungry Horse kilowatts into production, the equipment is on order and first generation is scheduled for the fall of 1952.

At Canyon Ferry, east of the Divide, Montana Power Co. wants to install its own generation equipment, paying the government $300,000 yearly for the falling water which the federal dam will provide, and paying full state, local and federal taxes—estimated at $300,000 yearly. And it says this move would save the government a $16,000,000 power investment, while the energy would be sold under state regulation.

But east or west of the Divide, another part of the power ownership fight is identical. Utilities don't want federal transmission lines to be built and the Reclamation Bureau insists on building them. Utilities argue that the power can best be used by integrating it with the output of existing thermal plants and moving it over existing transmission and distribution systems.

Reclamation, to the contrary, contends that federal transmission lines to the load centers are a necessity—not only to protect the purchasers on power rates, but to assure that preference customers actually get the power to which their preference entitles them.

There's a more basic reason, about which Reclamation doesn't say much, for the federal insistence on power facilities. The money these facilities can earn is necessary to help pay the cost of irrigation projects, now that all the cheap projects have been developed. Reclamation feels it can earn more money to help pay high irrigation charges by controlling the power facilities itself than by leasing them to private utilities.

◆

Brodie Wouldn't Know It—Plans for reconstruction of roadways and trusses of New York City's Brooklyn Bridge are before the Board of Estimate, with others for revamping bridge approaches, on the way.

The $2,260,000 estimated cost of the roadway and truss job is in the city's 1949 capital budget. Estimated cost of the approach job is $6,000,000. Capacity of the bridge would be substantially increased by the roadway and truss job.

Vacuum tests open new laboratory

Getting underway at the Army Engineers new concrete research laboratory near Jackson, Miss., are comprehensive, large scale tests on the vacuum process of treating mass concrete surfaces.

Run by the concrete research division of the Waterways Experiment Station, the seven-day series attracted about 75 federal engineers, representing division and district offices of the Corps of Engineers, the Bureau of Yards and Docks, and the Reclamation Bureau.

Several manufacturers contributed to the tests, among them Vacuum Concrete, Inc., Philadelphia, which furnished a large vacuum pump, with accessories, and also supervision of the vacuum process by J. J. Creskoff, a vice-president.

Blaw-Knox Co. designed and furnished special steel forms for one of the test specimens, and Vibro-Plus Products, Inc., Long Island, N. Y., furnished vibrators.

Herbert K. Cook, chief of the Concrete Research Division, was in charge of the tests, under Lt. Col. R. D. King, director of the Waterways Experiment Station. W. O. Crawley was superintendent of the test specimen construction operations.

Both formed and unformed concrete surfaces were involved in the tests. There were seven specimens, the largest containing 76.4 cu. yd. of concrete and representing a monolith in dam construction. It stands 16 ft. high on a 6-ft. foundation.

The other six represent slab construction.

One incentive for the tests is the fact the Corps of Engineers has been licensed for the past year by Vacuum Concrete, Inc., to use the patented process on civil works construction. Royalties, based on a square foot basis of surface area treated, are two cents for flat construction, six cents for precast work, and 10 cents on bridge construction.

Details of placing the concrete and applying the treatment will be published in a forthcoming issue of ENGINEERING NEWS-RECORD.

PERSPECTIVE . . .

City Planning Problems

It's been common knowledge, since the war's end permitted the resumption of unrestricted construction, that America's cities faced two pressing requirements:

1. The need to repair and replace public works which had grown old with use and years during the depression and war; and

2. The need to make many capital improvements—to supply services which people were demanding, to accommodate increased populations, and to keep cities livable (property values protected, in many cases) under the impact of numerous technical advances.

Where to get the money for all this civic capital improvement, particularly in the face of soaring construction costs, was a question which kept city fathers awake nights throughout the land. It's still doing so. Milwaukee offers an example of the perplexity of the job.

For instance, you can get pretty broad taxpayer acceptance of the contention that there have to be schools enough for all the children whose education is a public responsibility. And it's apparent that the war babies are swelling the school population of the land. New housing developments and residential communities are forcing the construction of new schools where schools never existed before.

So Milwaukee's long-term improvement program—in its unculled version—calls for $44,663,900 in school construction or modernization in the next six years.

But that's only one item—although by far the largest item—of Milwaukee's six-year improvement program. It's less than a fifth of the total cost of what Milwaukee's civic planners want to spend in the forthcoming six years. A summary of all the programs on city planning boards shows projects totaling more than $257 million. Apparently no one dreams that the city will build that much in six years. Those are only the projects that planners feel should be built. And that list doesn't include, except for a few small projects, any of the $129 million of expressway work planned.

Milwaukee newspapers say this total will be cut to less than half its total before it is approved. The problem: Where to cut it?

For instance, a summary of the top programs which have been proposed totals more than $144.5 millions, including the school needs. Out of this, the stunned taxpayer easily could delete the $5,914,000 museum, with another $1,500,000 for furnishings and equipment. But the other items appear less vulnerable. There's $4,302,400 for the fire department, only $902,128 for the health department.

Maybe there's no difficulty in dropping that $582,227 for the Bureau of Forestry's "concealed lawn irrigation systems and general landscaping of new areas." But there's $22,933,202 in the total for new bridges, municipal buildings and garages, and tampering seriously with that might continue or aggravate traffic conditions, about which cities have been worrying for years. There's $1,025,000 for garbage disposal, including two new plants; $2,114,750 for the Bureau of Engineers, whose top project is a downtown grade separation; and $6,225,000 for the Bureau of Electrical Service—permanent streetlighting, traffic control, fire and police alarms, etc. Sewers represent a $20,750,000 six-year program, parking another $9,997,000. The Harbor Commission wants $4,302,400 among other things for a package freight terminal. There are a lot of special—not necessarily selfish—interests who could be awfully unhappy about deleting the package freight terminal—or the sewers, or the traffic-speeding plans, or the schools. Or, if you delete playgrounds, you may not be saving taxes at all, but only transferring them. Penologists tell you that what you don't spend on playgrounds, you may spend on prisons.

After all, Milwaukee isn't just the place where they make a lot of nationally-advertised beers. It's the 13th city in the land with well over half a million people—more than three quarters of a million in its metropolitan area. It grew almost one third from 1920 to 1940.

And Milwaukee is only one big city. The 1940 census showed 91 more with populations of 100,000 or greater.

Utility to build 2 dams on Sultan River, Wash.

The Snohomish County Public Utility District of Everett, Wash., has voted to proceed with the development of the Sultan River through construction of two dams expected to generate 150,000 kilowatts of electric power.

Preliminary work on the $14,000,000 project is expected to start this year, with completion scheduled for 1952. One dam will be 310 ft. high while a second, a short distance downstream, will be 150 ft. high. Both will be about 4 mi. upstream from the Everett water department's diversion dam in Sultan Canyon. A smaller dam on Olney creek will be constructed for water storage and regulating purposes.

The larger dam will form a reservoir with a capacity of 83½ billion gallons while the second will back up 3¼ billion gallons.

The Sultan River plan, the PUD's first attempt at power generation, was approved by the Federal Power Commission last March. The PUD has awarded a contract to the Harza Engineering Co. of Chicago for preliminary engineering.

Cost estimates include $3,817,000 for Dam No. 1 and its reservoir, $3,632,000 for power installations, $5,200,000 for conduits carrying water from the dams to the generators and $1,081,000 for power transmission facilities.

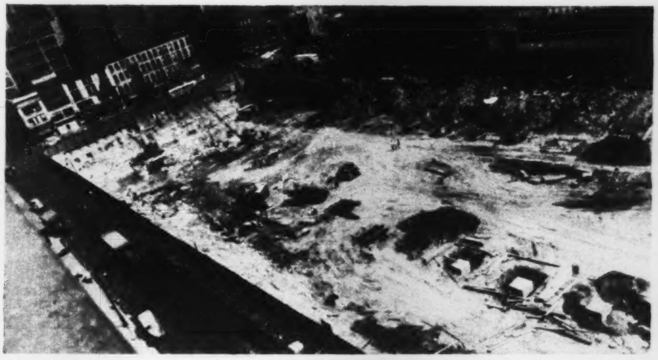
◆

Oil men move to void Missouri gasoline tax

Even before Missouri's Gov. Forrest Smith signed a bill imposing a four-cent-per-gallon gasoline tax, support for a referendum on the measure was growing.

Directors of the Missouri Petroleum Association rejected a plea by Smith that their group refrain from aiding the referendum movement. Instead, they voted to join it, and help obtain the signatures necessary to put the measure on the 1950 general election ballot. The association, said to represent more than 300 jobbers, covers about half the industry in the state.

Smith had asked the association, along with the Missouri Petroleum Industries Committee and the Missouri Bus and Truck Association to substitute a court test of the measure for the referendum fight. The Automobile Club of Missouri also opposes the plan.



EAST SIDE, WEST SIDE, the face of New York continues its ceaseless change. This is a west side project—the Port of New York Authority's new bus terminal occupying the full block between 40th and 41st streets and Eighth and Ninth Avenues. All buildings have been removed and concrete footings are now being poured. Building is designed to handle a peak traffic load of 1,500 busses hourly.

Plan $350 million aluminum plant

Top administrative and legal officials of the Aluminum Company of Canada entered discussion in mid-July with the British Columbia provincial government on terms of an agreement for development of a huge hydro program in connection with the company's proposed $350-$500 million plant development in the coastal area of the province.

McNeely Dubose, vice-president, Paul Lehman, Montreal lawyer, and Edward Baker, legal financial expert for the company from New York, met Maj. R. C. Farrow, water rights comptroller, and George Melrose, deputy minister of lands, at Victoria.

The company already has started a million-dollar survey of sites, with activity centralized on Tweedsmuir Park, west-central British Columbia, which company officials now report is their chosen area, providing present tests prove the engineering possibilities of the area.

Envisaged is a 1.5-mil. hp. hydro development to be carried out by damming the Nechako River, Fraser River tributary and creating a lake district with a surface area of some 600 sq. mi. with east-south flow of water being changed to a westerly direction.

Actual decision on the site will not be made for at least a year, according to vice-president Dubose, who has just returned from a flying tour of the area.

Regarding prospects for bedrock foundation for the 200-ft., clay-core Nechako River Dam, he reports drillers are down more than 100 ft. on the south bank and still in overburden. However, it is reported drillers struck bedrock at six feet on the other bank and have bored past the 20-ft. mark.

Prof. Karl Terzaghi, Harvard University, world authority on soil mechanics and foundations, is at the site acting as advisor.

In addition to drilling tests for dam foundations, a survey party is preparing for work on a preliminary location for a transmission line from Kemano River, powerhouse site, to Kitimat, suggested plant site, while another survey party under Col. Wm. Swan, Vancouver, B. C. consulting engineer, is making a townsite survey at Kitimat.

Big feature of the Nechako damming, for B. C., would include, besides the hydro development, a control on Fraser River floods, which might reach 7-10 percent of the flow in a critical flood year.

Five lakes are involved in the development, starting at Tahtsa, 30 mi. from Gardner Canal tidewater, where the powerhouse would be located.

If present tests should prove townsite and damming prospects at Kitimat and Nechako impossible, tests would continue in Dean River-Channel area to the south next year, and then possibly the Chilco Lake-Bute Inlet site, farthest south, the following year. The Tweedsmuir Park location, however, offers good possibilities of several combinations of development, since a wide area containing numerous lakes is involved.

Following a decision, it is expected work will begin on a powerhouse in 1952, but since it will take six years to drive a 10-mi. water tunnel through mountains in any of the three schemes, no real development could take place before 1958, according to Mr. Dubose, and production of aluminum might not begin for 10 to 20 years.

◆

New road funds seen; 15 states boost gas tax

Construction costs may be dipping, but that's not the case with a big source of road construction revenues. Fifteen states raised gasoline taxes this year—and it hasn't frightened motorists away from the highways, either.

In addition to the 15 who raised taxes this year, another three states made temporary tax boosts permanent. Altogether, 24 states have raised gasoline taxes since the war, the Public Administration Clearing House finds.

Missouri, New Mexico and North Dakota raised taxes 2 cents per gallon this year. Washington raised its levy 1½ cents, and Delaware, Kansas, Minnesota, Montana, Nebraska, North Carolina, Oklahoma, Oregon and Pennsylvania raised theirs 1 cent. Vermont and Nevada added half a cent to their taxes. For Vermont and Kansas, these were the second postwar raises. North Dakota and Missouri will have to wait for the extra money, until the voters ok the boosts. In North Carolina, the referendum was carried in June, and the tax becomes effective January 1.

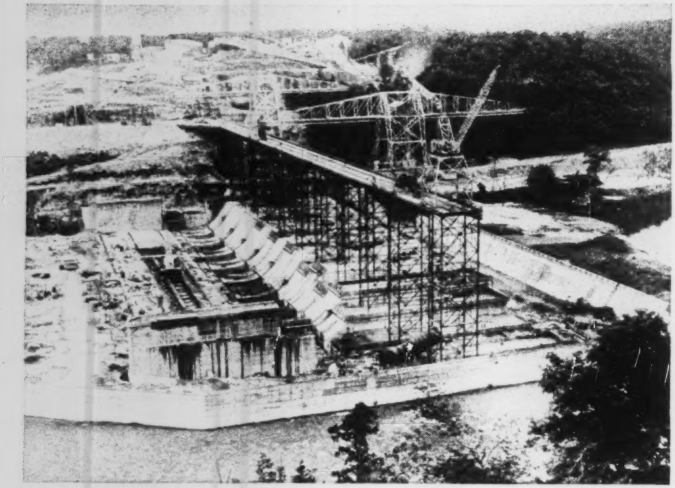
Idaho, Maine and West Virginia were those who made temporary taxes permanent. Now, state taxes range from Missouri's 2 cents to Louisiana's 9 cents.

◆

Start work this week on $5 million store

Excavation was to start this week for a new John Wanamaker store at Wilmington, Del., which is expected to cost more than $5,000,000. John McShain, Philadelphia contractor, was successful bidder on the general construction contract. Lewis H. Doane, Wilmington structural engineer, and the Stewart A. Jellett Co., Philadelphia, also have been awarded contracts. Massena and duPont are architects. It is hoped the store will be open for business by October, 1950.

The building will be constructed of stone. It will have two full selling floors, of 165,000 sq. ft., and a penthouse, year 'round air conditioning, a 1,000-car paved parking area, and snow-melting devices embedded in outdoor walkways.



ARKANSAS' BULL SHOALS DAM looks like this, these days, as two hammer-head cranes and a whirler feed concrete down from the 200-ft. construction trestle to the concrete monoliths below. The four cu. yd. buckets of concrete are brought from the aggregate plant in the background to the trestle by railroad car. A penstock section may be seen in the foreground. When completed in 1951, the dam will be 283 ft. high and nearly half a mile long. (Acme Photo)

Experiments with fog made in California lab

Tests and measurements of various sorts are being made in a laboratory at the University of California that was established in 1943 when the U. S. Navy needed help in tests relative to dispersal of fog from airfields. The end of the war terminated those studies but under sponsorship of the Institute of Transportation & Traffic Engineering work has been continued with a view to its peacetime value.

Equipment includes means for making fog of various types and observing through the glass windows in a large tank such things as its ability to transmit light under varying conditions of moisture, temperature, presence of smoke or dust particles, etc.

The studies have put emphasis on three principal types of fog, namely: (1) Radiation fog which occurs in valleys and is formed when air loses heat to the ground through radiation, with resultant vapor condensation;

(2) Advection fog, typical of coastal regions where air drifts in from an area of warmer water to mix with air over a cooler area and

(3) Pressure fog which forms on hill summits when a saturated air mass moves upward and the consequent pressure change causes air temperature to drop below the dew point.

Prof. Dan M. Finch, in charge of the fog research project, says that very little is on record about the physical characteristics of fog and that further studies should develop useful data about the use of fog screens for hiding objects in wartime as well as on such peacetime applications as methods of smog control and improved methods for reporting fog conditions from weather observation stations.

◆

Ashley seeks coordination of building research

Close coordination between the $15,000,000 of existing privately financed building research and the federal government's new housing research program was asked this week by President James M. Ashley, of the Producers Council.

The federal program, authorized under the new public housing bill which became law recently, will yield best results if it is coordinated with the work of the Building Research Advisory Board, Ashley said. BRAB was organized recently under the auspices of the National Academy of Sciences. It is financed by companies and associations in every major branch of the building industry. It was formed to analyze the industry's over-all research needs.

Cheap light plane strips to be tried in Oregon

Small landing strips for private planes—costing as little as $250 apiece—are getting a tryout in Oregon. They'll accommodate planes in sparsely settled areas or open up inaccessible spots.

The State Board of Aeronautics has authorized three, at Straton, Paulina and Weconda Beach. If they work out well, more will be authorized. Director W. M. Bartlett said that with local co-operation cost can be kept down to as little as $250. Land is to be donated or made available by public bodies on long-term leases. Grading of the 1,500-2,000-ft. strips will be done by local or state crews. Strips will be 75-100 ft. wide.

◆

White House group names engineer, architect aides

Two engineers and an architect were named last week to aid in the renovation of the White House. They are: Emil H. Praeger, partner in the Madigan-Hyland engineering firm of Long Island City, N. Y., and former head of the civil engineering department of Rensselaer Polytechnic Institute; Ernest E. Howard, of Howard, Needles, Tammen, and Bergendoff, internationally known bridge designers of Kansas City, Mo.; and William A. Delano, New York City architect, and former member of the National Capital Park and Planning Commission, Washington, D. C.

Praeger and Howard will serve as consulting engineers, and Delano as consulting architect, for the commission on renovation of the White House. They will serve with Maj. Gen. Glen E. Edgerton, previously named executive director for the commission (ENR July 14, p. 10).

◆

Pittsburgh wall collapse blamed on bad mortar

Death of five Pittsburgh pedestrians and injury of seven more under a collapsing brick parapet was attributed to bad mortar by Pittsburgh building inspector Georg M. Boileau.

Damage was done to three automobiles parked at the scene, and an iron utility pole was sheared off. Boileau found that lime mortar had crumbled sufficiently that a sign overhanging the sidewalk pulled the wall down. The victims were walking beneath the sign, inspected last year, when the wall collapsed.

Boston Water System Loses 60-in. Feeder

A million and a half residents of Greater Boston got two breaks in their water supply late last week, but only one of them was bad.

The first came when a leaded joint of a 60-in. feeder supplying the city's water system broke at the height of a heat wave.

The second break came 36 hours later, when full service was restored without the necessity of replacing any part of the water main itself.

Residents of 22 towns and cities escaped with nothing more serious than requests not to use water for any non-vital uses. But Metropolitan District Commission officials had some anxious moments. Until the break was uncovered—five feet below a concrete pavement in Newton—it was problematical whether the job would entail a routine joint repair or a much longer pipe-replacement job.

And to help maintain presure, a 50-year pump was put into service at Stoneham.

MDC officials weren't sure it would hold up, but it did.

Harold J. Toole, chief engineer of MDC's water division, said there was "some" pressure drop throughout the system, but not enough to raise any real problems. He said the reasons for the joint's failure were unknown to the commissioner.

Failure came in a main which transfers water from the Weston Reservoir to the city system. The affected area uses more than 200,000,000 gal. daily.

◆

W. H. Scheick of Illinois to head building research

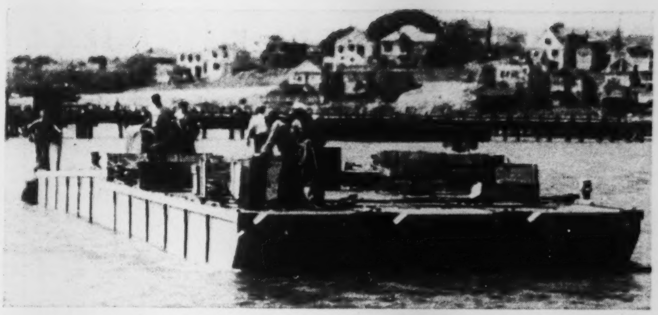
William H. Scheick, coordinator of the Small Homes Council, University of Illinois, on Sept. 1 will take over full-time duties as the first executive director of the National Research Council's new Building Research Advisory Board. Frank B. Jewett, chairman of BRAM announced the appointment of Mr. Scheick to the board last week.

BRAB was established last winter (ENR Feb. 24, p. 9) to coordinate, guide and encourage scientific and technological research in the diverse component fields of the building construction industry. Its policies and program are determined by a 27-member board of outstanding research and development men from industry, government and non-profit research organizations.

Appointment of Mr. Scheick as executive director marks the first step in developing an operating staff for the board.

His headquarters will be at the National Research Council, Washington, D. C.

As coordinator of the Small Homes Council, Mr. Scheick has successfully planned and carried out in University research fields many correlating and coordinating activities of the same type that he now will undertake on a national and an international scale.



CIVILIAN SEABEE RESERVES get in some after-hours training with these pontoon barge units which were so common during the last war. These reservists are taking their units 50 mi. up the Sacramento River from the Mare Island Naval Shipyard to their home port.

Farm rehabilitation means new business

There's some new business coming up for building supply dealers serving rural areas. It'll come after Congress votes funds to back up the new public housing bill.

Dimensions of the new business are spelled out in the law's section dealing with farm housing: $250 million for loans and $25,000,000 in direct grants over a four-year period. And if Congress votes the full authorizations, the money available will increase yearly—from $25,000,000 to $100 million in loan funds and from $2,000,000 to $10,000,000 grants.

Prospect is, too, that the program will develop a part of the market hitherto less promising than it may now become.

That seems to be true because no loans will go to farmers who have the cash or the credit to do what's necessary without assistance from the federal government.

Farmers Home Administration—which'll administer the program for the Agricultural Department—anticipates that 135,000 farmers will get loans during the four-year period. The Southeast is expected to do best under the program.

Repairs, alterations, improvements—these are the most likely causes for loans.

There won't be much entirely new construction. And not all of the money will go for building, for electrical and farm equipment dealers will participate too. Tenant farmers won't get any directly, but tenant farm owners can.

It shouldn't take long to get the program going once the funds are voted.

FHA has been in the business 11 years and is all set to go.

◆

Canada has $157 million road plans for 1949-50

Canadian provinces will spend about $157 million on new roads and road maintenance during 1949-50, according to a recent survey made by the Toronto Financial Post.

Of this total Ontario will spend most with over $64,000,000 to be spent on provincial roads and provincial assistance to municipal roads. Quebec is to spend $35,000,000 on maintenance and new roads, and British Columbia $13,000,000. Other provinces are slated to spend lesser amounts.

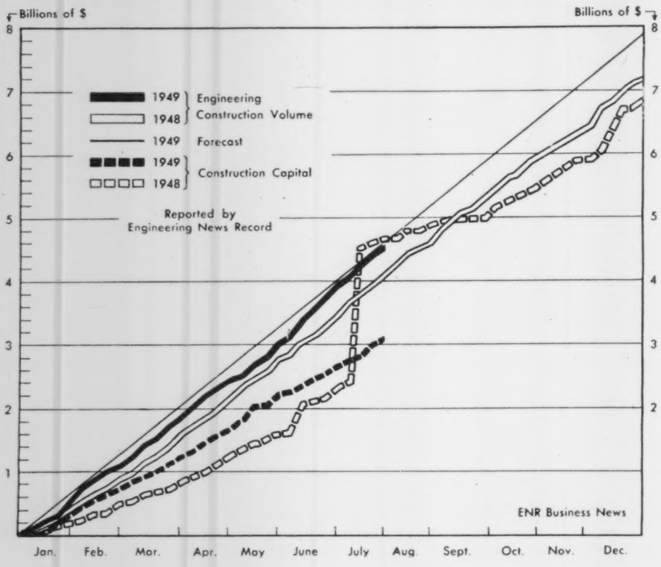
The 1949-50 expenditures on roads are reported double the annual average of $76,000,000 during the five years preceding the outbreak of war in 1939.

◆

Engineer to boss traffic

A "qualified" engineer will be St. Louis' new traffic commissioner, under a bill signed recently by the Mound City's mayor.

CONSTRUCTION BUSINESS



July public contract awards a record

Public heavy construction contract awards established a new postwar record of $99,485,000 weekly in July, as state and municipal work averaged a peak $73,025,000, according to ENGINEERING NEWS-RECORD.

Private awards of $55,376,000 and federal awards of $26,460,000 weekly, added to the record state and municipal rate, bring the July average to $154 million a week—topped this year only by last month's peak of $179 million.

Federal awards show the sharpest rise over a year ago, percentagewise, with a 77 percent increase. State and municipal contract volume is 30 percent above the July 1948 rate, while private awards are below last year by 23 percent. Total awards for July are 8 percent over the weekly average in July, 1948.

The 1949 total for heavy engineering construction now stands at $4.58 billion, 17 percent above this time a year ago. State and municipal construction of $1.78 billion for the seven months is 26 percent above 1948; private construction of $2.13 billion is ahead 11 percent; and federal work totaling $660 million is up 9 percent.

Highway construction hit a new postwar high of $28,861,000 weekly in July, on the heels of a slow start earlier this year. This award rate tops May, the previous record, by 11 percent, and the July 1948 weekly highway volume by 25 percent. The seven-month total for highway contracts is $522.3 million—only 9 percent behind last year—compared to a 30 percent lag at the end of April.

Commercial building of $35,497,000 weekly in July is a low for the year, and six percent below the July 1948 rate. Industrial building at $11,713,000 a week is next to the January low of $10,174,000, and two percent less than last year. Public building is the only class of building work to top the previous month. At $36,955,000, it is next to the January high of $41,240,000, 10 percent above June, and 52 percent over a year ago.

Earthwork and drainage awards averaged $10,490,000 a week for the month, five percent below June, but topping a year ago by a whopping 88 percent. Sewerage at $3,582,000 is a near low for the year.

ENGINEERING CONSTRUCTION CONTRACTS REPORTED TO ENGINEERING NEWS-RECORD—JULY, 1949

Engineering News-Record *reports continental U. S. Construction projects of the following minimum costs—Waterworks, excavation, drainage and irrigation,* $28,000; *other public works* $50,000; *industrial buildings,* $68,000; *other buildings,* $250,000
Four Weeks—Thousands of Dollars (000 Omitted)

	July, 1949						U. S. Cumulative	Seven Months		% Change	
	New England	Middle Atlantic	South	Mid-West	West of Mississippi	Far West	Total U. S.	1949 (30-weeks)	1948 (31-weeks)	'48-'49 Aver. Wk.	Canada July '49
Public Works											
Waterworks	1,094	417	1,334	742	2,495	1,849	**7,931**	**95,085**	110,745	− 11	658
Sewerage	296	4,078	1,480	2,215	1,780	4,477	**14,326**	**144,002**	127,572	+ 17	489
Bridges	787	3,678	2,729	3,583	4,379	3,327	**18,483**	**188,363**	170,182	+ 14	892
Earthwork and waterways	1,056	9,825	7,035	6,336	4,401	13,306	**41,959**	**350,597**	300,346	+ 21	544
Streets and roads	3,391	27,642	15,091	16,539	38,006	14,775	**115,444**	**522,307**	595,256	− 9	6,938
Public buildings, residential	10,987	13,435	1,349	6,155	12,863	2,984	**47,773**	**249,075**	59,829	+330	6,198
Other public buildings	6,746	16,826	24,263	13,390	25,476	11,345	**98,046**	**700,944**	571,414	+ 27	10,542
Unclassified	4,085	15,565	5,191	2,408	13,555	13,174	**53,978**	**195,040**	129,879	+ 55	18,296
Total public	**28,442**	**91,466**	**58,472**	**51,368**	**102,955**	**65,237**	**397,940**	**2,445,413**	**2,065,223**	**+ 22**	**44,557**
Federal government (included in above classifications)	3,785	14,877	17,671	8,111	35,859	25,536	**105,839**	**660,932**	602,049	+ 13	13,162
Private											
Bridges	...	...	...	...	170	...	**170**	**3,263**	2,485	+ 36	...
Industrial buildings	213	3,060	5,580	3,783	31,976	2,241	**46,853**	**551,143**	580,631	− 2	3,144
Com'l buildings, residential	6,053	27,424	14,790	9,622	37,970	7,054	**102,913**	**1,012,198**	868,417	+ 20	4,685
Other commercial buildings	930	11,553	6,354	4,934	12,222	3,080	**39,073**	**330,058**	285,406	+ 19	3,936
Unclassified	50	399	3,223	1,533	26,375	913	**32,493**	**237,336**	244,926	+ 0.1	2,425
Total private	**7,246**	**42,436**	**29,947**	**19,872**	**108,713**	**13,288**	**221,502**	**2,133,998**	**1,981,865**	**+ 11**	**14,190**
Total Engineering Construction:											
July, 1949—4 weeks	**35,688**	**133,902**	**88,419**	**71,240**	**211,668**	**78,525**	**619,442**	...	...	...	**58,747**
June, 1949—5 weeks	51,461	182,323	127,820	143,949	236,766	153,809	**896,128**	...	...	...	47,861
July, 1948—5 weeks	29,640	172,046	101,602	98,275	229,058	83,098	**713,719**	...	...	...	60,648
Seven Months—1949	**211,075**	**1,120,340**	**676,999**	**588,056**	**1,247,405**	**735,536**	...	**4,579,411**	...	**+ 17**	**357,789**
Seven Months—1948	177,824	1,122,242	653,706	476,377	1,053,648	563,291	...	...	4,047,088	...	251,815
% Change '48 to '49	+23	+3	+7	+27	+22	+35	...	...	...	...	+47

BIDS AND BIDDERS

Central Traffic Artery—Commonwealth of Massachusetts, Dept. Public Works, Boston, plans central traffic artery in Boston to eliminate downtown traffic congestion. Estimated cost is $25,000,000. Fay, Spofford & Thorndike and Charles A. Maguire Associates, both of Boston, are engineers.

Cement Mill—S. A. Guiberson, Jr., Los Angeles, awarded contract to McNeil Construction Co., Los Angeles, to construct cement plant at Whitewater, Calif., to manufacture 10,000 bbl. cement per day. Estimated cost of the project is $15,000,000.

Paper Mill—Columbine Development Co., Grand Junction, Colo., plans paper mill between Rifle and Newcastle, Colo. Estimated cost is $15,000,000.

Apartment—Twin Oaks, Inc., Kansas City, Mo., plans two 11-story apartments, in Kansas City, Mo. Estimated cost is $7,000,000. Voskamp & Slezak, Kansas City, are architects.

School – Superintendent School Buildings, Design and Construction, Brooklyn, N. Y., awarded contract for Junior High School No. 240, in Brooklyn, to Caristo Construction Co., Brooklyn, at $2,097,000.

Uranium Ore Mill—Green River Exploration Co., Salt Lake City, Utah, plans uranium ore mill to cost $10,000,000 near Marysville, Utah.

Refinery—Addition—Bechtel Corp., Torrance, Calif., will build coker unit addition to refinery for General Petroleum Corp., Los Angeles, to cost about $2,250,000. M. W. Kellogg, New York, N. Y., is consulting engineer.

Bauxite Transfer Station—The American Alcoa Steamship Co., Port of Spain, Trinidad, B. W. I., plans bauxite transfer station at Cavenage, B. W. I., at an estimated cost of $6,000,000.

Office—Uris Brothers, New York, N. Y. will build 25-story office building, Madison Ave. and 56th St., New York, with own forces. Cost is $6,000,000. Emery Roth, New York, N. Y., is architect. First building with own built-in garage under new New York City law.

Naval Observatory—Navy Department, Washington, D. C., plans Naval Observatory in Piney Mountain Area, Albermarle County, Va., to cost about $8,000,000.

Pennsylvania Turnpike—Pennsylvania Turnpike Comm., Harrisburg, awarded contracts for two sections of Turnpike in West Cocalico Township, Lancaster County, to H. J. Williams, York, at $2,048,768; and one in East Cocalico Township to Ralph Myers, Salem, Ind., $1,896,394. Gannett, Fleming, Corddry & Carpenter, Harrisburg, are consulting engineers on the job.

Hospital—Lankenau Hospital, Philadelphia, Pa., plans hospital, in Overbrook Section to cost $6,000,000. Vincent G. Kling, and George M. Ewing, both Philadelphia, are architects on the job.

Blooming Mill—Youngstown Sheet & Tube Co., Youngstown, plans enlarging blooming mill at Campbell Works to cost $4,500,000.

Flour Mill—Burrus Mill & Elevator Co., Dallas, Tex., plans constructing flour mill in Regla, Cuba, at an estimated cost of $4,000,000.

Sewer Outfall—East Bay Municipal Utility Dist., received low bid from George C. Pollock Co., Sacramento, and Ben C. Gerwick, San Francisco, for sewer outfall, Schedule 1, at $1,687,916; low bid on Schedule 2 was from Healy-Tibbitts Constr. Co., San Francisco, at $1,267,072.

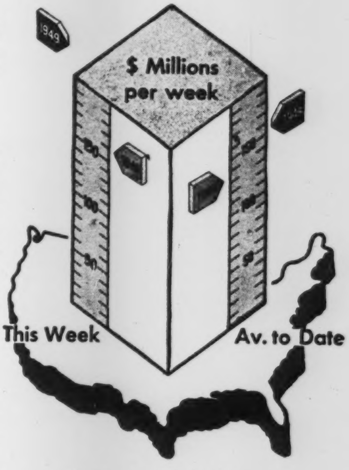
Power Plant—F. H. McGraw & Co., Chicago, Ill., were low bidders on steam power plant at Cassville, Wis., for the Dairyland Power Co-operative, LaCrosse, Wis., at $1,165,568.

Hospital—U. S. Engineers, Albuquerque, N. M., have deferred taking bids on hospital at Albuquerque until Sept. 15, due to changes in plans. The estimated cost is $2,000,000.

COSTS AND VOLUME

ENR INDEX NUMBERS

Index Base = 100		1913	1926
Construction Cost..	Aug. '49	478.28	229.91
Building Cost	Aug. '49	350.72	189.59
Volume	July '49	280	123



Activity This Week

As reported to ENR
(in millions of dollars)

Amount of Contracts let

	Week of Aug. 4 1949	Cumulative 1949 (31 wks.)	1948 (32 wks.)	% chge av.wk.
Federal	$27.0	$688.0	$624.1	+14
State & Mun.	111.9	1,896.4	1,528.9	+28
Total Public.	$138.9	$2,584.4	$2,153.0	+24
Total Private	100.3	2,234.2	2,047.7	+13
U. S. Total.	**$239.2**	**$4,818.6**	**$4,200.7**	**+18**

Contracts by type of work

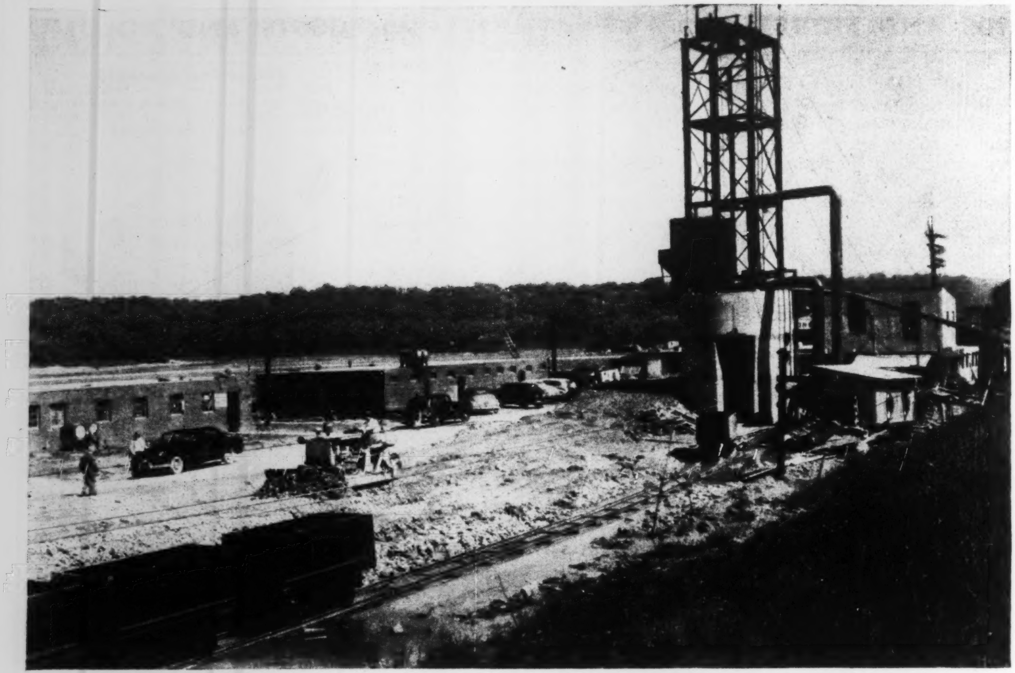
	This Week	Cumulative 1949 (31 wks.)	1948 (32 wks.)	% chge av.wk.
Waterwork.	$46.3	$141.4	$122.4	+19
Sewerage ..	4.7	148.7	132.8	+16
Bridges	3.3	194.9	182.5	+10
Highways ..	27.7	550.0	612.4	−7
Earthwork, Waterways.	21.9	372.5	305.2	+26
Buildings,				
Public ...	26.8	976.8	668.3	+51
Industrial .	62.8	613.9	593.0	+7
Commercial	33.9	1,376.1	1,193.2	+19
Unclassified .	12.0	444.4	390.8	+17

NOTE: Minimum size projects included are: Waterworks and waterway projects, $28,000; other public works, $50,000; industrial buildings, $68,000; other buildings, $250,000

New capital for construction

	Cumulative 1949 (31 wks.)	1948 (32 wks.)	% chge av.wk.
NON-FEDERAL ..	$3,219.6	$2,951.8	+13
Corporate Securities	1,693.6	1,403.7	+25
State and Municipal	1,526.0	1,120.9	+41
Federal-Aid Highway	....	427.3	....
FEDERAL	*	1,558.9	....
Total Capital	**$3,219.6**	**$4,510.8**	**−26**

*No federal approp. 1949 to-date



Work-shaft 1835-ft. deep, with 52-ft. headframe is key facility in . . .

Getting Ready to Drive a Deep-Water Tunnel

IT COST THE CONTRACTOR on Cincinnati's new water tunnel $270,000 to remove the first "pay-yard" from the tunnel excavation. Not unusual in deep-tunnel construction, the figure is a good indicator of the vast amount of planning, preliminary construction and equipment needed to start tunneling.

The tunnel will be 13,620 ft. long, connecting the city's water treatment plant—in the southeastern part of Cincinnati—and a high-service pumping station now under construction. When completed in 1951, the new facilities will more than double the pumping capacity from the treatment plant to the city. The tunnel roughly parallels an existing 7-ft. tunnel built in 1900.

The completed tunnel will be circular, with an 8-ft. inside finished diameter. The tunnel bore will be lined with an average of 12 in. of unreinforced concrete. Theoretically, the tunnel bore is circular, with a 10-ft. minimum diameter and a pay-limit diameter of 11 ft. 4 in. Actually, driving operations are producing a tunnel roughly horseshoe-shaped and slightly more than 10 ft. wide.

Total contract cost of the completed conduit, including permanent 10-ft. dia. shafts at the treatment plant and pumping station, is $3,209,000. One shaft will be 168 ft. deep and the other, 160 ft.

One work-shaft; two headings

In planning the job, the contractor elected to drive the entire tunnel from the single work-shaft, rather than from the two permanent shafts at the ends of the line. Tunneling from the single work-shaft requires considerably less hoisting equipment and permits closer supervision of the work. It also requires a smaller crew by concentrating operations at one point. Much of the concrete lining also will be placed from the work-shaft.

The $270,000 cost of removing the first cubic yard of tunnel excavation represents $210,000 for equipment and materials, and $60,000 for labor. It includes sinking the work-shaft, furnishing and installing all equipment needed for driving the tunnels and hoisting the muck to the ground surface. Also included are the ventilation and lighting systems, and a complete contractor's camp of shops and offices built adjacent to the work-shaft.

Virtually all equipment was either bought new for the job or designed and fabricated by the contractor to serve special purposes. New equipment for the job was chosen for two reasons—less maintenance, and better salvage value upon completion of the project. The work-shaft will be filled and abandoned upon completion of the project.

A great deal of advance planning went into the design of this work-shaft, hoisting equipment and other plant facilities. Since the job was to run two years, dependable 24-hr. operation at maximum efficiency justified making all installations semi-permanent. And the depth of tunneling operations dictated the use of all possible safety precautions.

Drop-type concrete caisson

Construction of the work-shaft was started last December 15. It is a concrete drop-caisson, 11 ft. 4 in. inside diameter with a 2-ft. thick wall. The caisson was sunk through 95 ft. of water-bearing gravel and sand and extended 5 ft. into limestone and shale. The bottom of the caisson was sealed against the surrounding rock, and the shaft was excavated on down through 40 ft. of rock to the invert elevation of the tunnel.

The concrete caisson was cast at the work-shaft site inside of steel forms fabricated by the contractor. A 50-ft. height of caisson—extending 25 ft. below ground level to the bottom of the steel cutting shoe, and 25 ft. above—was cast and cured before the contractor started to sink it by interior clamshell dredging. Additional 12½-ft. lifts of concrete were added to the caisson as sinking progressed.

A suitable working chamber was excavated in the rock at the bottom of the shaft preparatory to starting the two tunnel headings. The working chamber extends 60 ft. each way from the center of the shaft. It is 22 ft. wide, directly beneath the shaft, with the sides converging to a width slightly more than the width of the tunnel bore. Sides and roof of the chamber are reinforced with three-piece and two-piece steel ribs, with straight sides and curved roof beams.

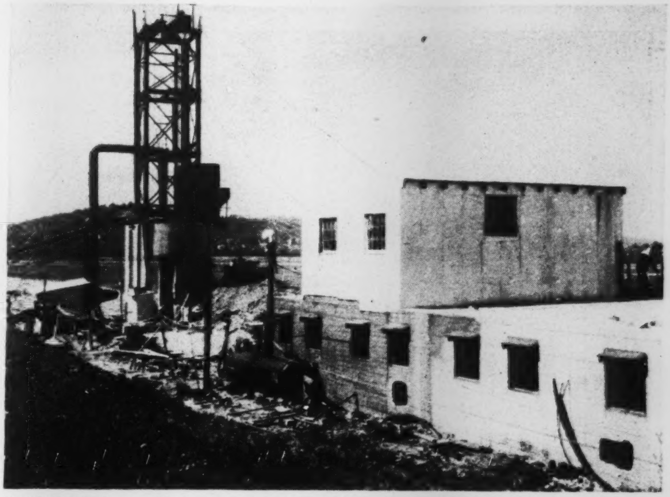
The work-shaft is adjacent to Lunken Airfield and is in a flood plain of the Little Miami River. Consequently, the top of the shaft was carried 20 ft. above ground level and 5 ft. above flood level. In the event of a flood, the two entranceways in the shaft can be bulkheaded to prevent flooding in the headings and shaft.

Headframe construction

A 52-ft. steel headframe on top of the work-shaft supports the hoisting sheaves. It was designed and fabricated by the contractor, especially for the job. The contractor also built his hoist cage and elevator systems in the work-shaft. Elevator guides are 4x6-in. pine, backed-up with a 6x½-in. steel plate, and bolted to the elevator frames with 4x6-in. timber guides.

The shaft is constructed for dual hoisting operations. Materials are lowered through a trap-door at ground level, on one side, while the other half of the shaft houses the hoisting cage.

The hoisting skip is a dual-compartment cage also designed especially for the job. The top compartment carries a maximum of eight workmen; the lower half handles the muck. This 120-cu. ft. skip is self-dumping. As it emerges from the concrete shaft, lugs at the top of the bucket engage curved slots on wing plates bolted to the headframe, tipping the skip and discharging the muck into dump trucks for haulage to the disposal area.



HOUSING for ventilating fans is adjacent to the work-shaft. These fans supply air to each heading through 18-in. pipe. The hoist-house was placed on top of a cast-in-place concrete compressor room and repair shop.

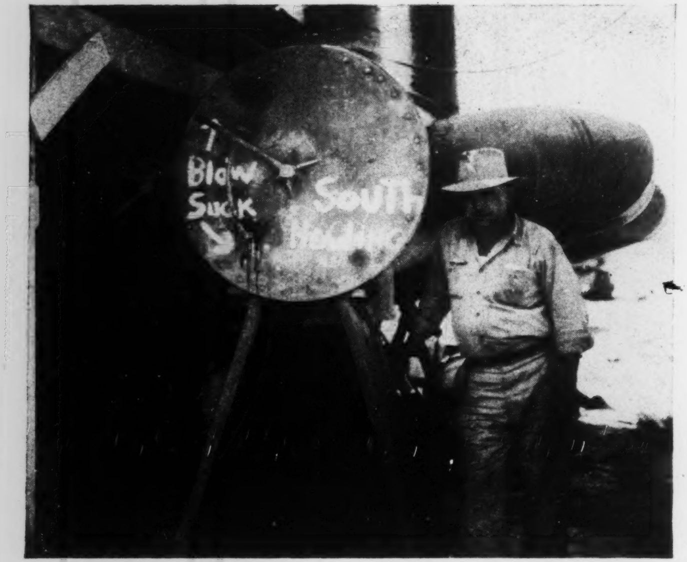
HEADFRAME was extended 52 ft. above the work-shaft to handle the combination eight-man cage and the automatic-dumping muck-skip. Bulldozer built truck-loading ramp with limestone and shale removed from the tunnel.

Cast-in-place concrete shops

The contractor's shops, hoist-house and headquarters—all located near the work-shaft—are cast-in-place concrete. Such permanent construction might seem uncalled-for on a construction job of only two years' duration, but it was actually a point of economy. Concrete floors for the buildings were placed directly on the ground. The walls and roof then were cast in place inside special steel forms used last year in building 15-ft. wide by 10-ft. high reinforced concrete box culverts for the Bloody Run sewer in Cincinnati.

There are three of these buildings, each requiring six days to construct. Two are 75x30 ft., and one is 75x36 ft. Each has a concrete dividing wall for its entire length. All three are heated from a central oil-burning heating plant. One building is the workmens' "change" house, containing lockers, showers and toilets. One serves as the contractor's and engineers' field offices, as well as a small-tools and supply room.

The third building, located 75 ft. from the work-shaft, is two stories. One-half of the lower story houses the compressors and drill-maintenance shop. The other half is a general repair shop. The second story of this building is the hoist-house. It contains one 60-hp. materials hoist and one 100-hp. hoist for the muck and the work-



SIMPLE INSTRUCTIONS at the blowers indicate whether air is being blown to, or exhausted from, each tunnel heading.

men. Both hoists are electric, and equipped with limit switches to control hoisting speed and load.

Ordinarily, the concrete roof of these cast-in-place concrete buildings is 6-in. thick. An additional 9-in. slab was placed under the hoist-house to give a solid anchorage for the hoists. Additional stability was secured by extending four concrete-filled 10-in. dia. corrugated metal pipe from the floor of the hoist-house, down through the first story of the building onto concrete footings below the ground floor (see corrugated-pipe columns below).

Locating the two hoists in the second floor of this building has two advantages: It gives the operator an unobstructed view of the work-shaft, and keeps all hoisting cables clear of the working area around the shaft. Hoisting signals are transmitted by telephone from a signalman at the bottom of the shaft to one at ground level. He, in turn, transmits them to the hoist operator, by hand signal. Dial indicators located in the hoist-house also indicate the position of the cage and bucket at all times.

Four 365-cfm. compressors supply air to the two 4-drill jumbos. They feed into a 42-in. by 15-ft. receiver just outside of the compressor room. A 6-in. line from the receiver extends down the shaft to an aridifier and two 4-in. take-offs connecting with 4-in. lines leading to the jumbos.

Three electrical centrifugal pumps with a total capacity of 1,400 g.p.m., installed at the bottom of the shaft, discharge seepage water through an 8-in. pipe extending up the shaft and over an adjacent dike.

Tunnel in rock

Although the tunnel is 135 ft. below ground it will have about 25 ft. of rock cover beneath the 90-ft. strata of water-bearing gravel and sand. It may not be necessary to mine any of the tunnel under compressed air. Tunnel liner may not be needed in any great quantity, but enough steel ribs and lagging, furnished by the city, has been stockpiled for 1,000 ft. of tunnel support, if needed.

The tunnel is ventilated with forced-air, operating on the "blow-and-exhaust" principle. Air for ventilation is supplied by two 7,050-cfm. electric blowers, one for each heading. The fans are located adjacent to the shaft, with the air being carried down the shaft and to within 50 ft. of each heading in 18-in. spiral-weld pipe. These two fans are believed adequate for ventilating the entire tunnel.

Two sources of electric power

All mucking and hoisting equipment is operated by electric power. Two independent power lines feed into the transformer station, one for regular supply; the other for standby in case of a power failure in the first line. Should the main power line fail, the second one will cut in automatically.

PERMANENT YET ECONOMICAL construction was incorporated in the compressor room (at left) and the repair shop (at right) by making them of reinforced concrete cast in special steel box-culvert forms formerly used on a Cincinnati sewer project.

The known presence of methane gas in the tunnel calls for additional safety precautions. All electric motors and the tunnel lighting system have explosion-proof fixtures. The tunnel also is tested periodically with flame-safety lamps.

It took about 2½ months to sink the work-shaft, mine and frame the 120x20-ft. working chamber at the bottom of the shaft, install the elevators and set up all buildings and operating equipment at ground level.

Tunneling started each way from the work-shaft on Mar. 1 and, by June 15, the headings had been advanced 1,290 ft. and 1,320 ft., respectively. Best day's driving to date has been 81 ft. of tunnel, in both headings.

Methods and equipment employed in the tunneling will be described in a subsequent issue.

Contractors and engineers

Foley Construction Co., Cincinnati, is the contractor. Harry D. Foley is in direct charge, assisted by his brother Lawrence. Ted Stewart is general superintendent.

Black and Veatch, consulting engineers, Kansas City, Mo., prepared the design plans and are supervising construction. Martin Hemker is resident engineer, and Ed Farmer is principal engineer on design and construction.

Representing the city are Carl Eberling, superintendent of water works; and R. E. Duhme, assistant superintendent of water works.

Cleveland Adopts New Building Code

Cleveland (Ohio) has what is believes is one of the most progressive and functional building codes in the United States. It is not held to be an immediate panacea for all of the city's building problems. Fundamentally, it was drafted to meet present-day requirements and set up machinery to keep it automatically up-to-date.

For example, nationally accepted standards, such as those of the American Institute of Steel Construction, American Concrete Institute, American Standards Assn., and the National Lumber Manufacturers Assn. have been utilized wherever possible to define acceptable good practice in design, quality of materials and construction. Reference to the various standards is by title, designation and date of issue. Changing the dates of issue (by city ordinance) as new standards are issued, will keep the code up-to-date.

More than two years of study and work went into the drafting of the bulky, 800-page document, at an estimated cost of $30,000, including the cost of printing. The code became effective on June 27.

Groundwork for efficient operation of the code was laid last fall when a charter amendment was approved by the voters authorizing the establishment of a five-man Board of Building Standards and Building Appeals (ENR Nov. 18, 1948, p 13).

Primarily, the board will settle questions of building materials and types of construction, and decide appeals from regulations of the code. Members of the board will receive pay at the current rate—probably in the neighborhood of $50 per day—with an annual limit of $2,400 payment each.

Many outmoded and obsolete building practices in the old code are discarded under the provisions of the new one. Last printing date of the city's old code was 1924, but some archaic provisions dated back to 1880.

Cleveland's new building code emphasizes performance standards as the basis for acceptance of construction materials. It permits the use of any material or construction method meeting specified functional requirements. Records will be made available to the public on all new construction materials approved by the Board of Building Standards and Building Appeals.

Prefabrication and site-fabricated methods of constructing dwellings and row houses not over 2½ stories in height are specifically permitted under the code providing the materials and methods meet acceptable performance requirements developed by the Housing and Home Finance Agency.

In addition to specifying nationally approved specification standards as bases for acceptable materials and construction procedures, the code records in considerable detail certain requirements for conventional materials.

For example, permissible design stresses are given for structural steel, reinforcing steel, plain and reinforced concrete and masonry. Permissible design stress for structural steel in tension is 20,000 psi. Allowable water content is given for five classes of concrete, together with minimum compressive strengths at 28 days; ranging from 2,000 psi. to 4,500 psi.. Air-entrained concrete is permitted, with a maximum 5 percent entrained air.

Cavity wall construction is permitted and requirements are specified. Basement walls not over 5 ft. high below grade level may be 8-in. thick. Acceptable methods of construction of floors placed directly on the ground are covered in detail.

Stressed-skin plywood assemblies are permitted under the code, and acceptable bases of design are given. And bituminized-fiber pipe is permitted for outside storm and sanitary sewers.

While many construction requirement have been made more rigid than those required under the old code, in the interest of safety, health and welfare of the public, certain provisions of the new code will reduce construction costs. One example is reduction in the design live loading as follows:

	Live load (lb. per sq. ft.)	
	Old Code	*New Code*
Apartments	70	40
Dwellings	60	40
Hotel Rooms	70	40
School classrooms	70	50
Auditoriums (fixed seats)	80	60
Auditoriums (loose seats)	125	100
Flat roofs (snow load)	35	30

A large section of the code is devoted to fireproof construction and fire prevention. Buildings are classed into four general types of fireproof construction and into ten sub-types according to the character of materials employed and the fire safety afforded.

The degree of fireproofing is based on "fire load", which is the average pounds of combustible material with calorific value of 8,000 Btu. per pound per square foot of floor area involved. Prefabricated metal flues may be used in place of masonry chimneys.

Fire-restrictive enclosures

One provision of the code that will reduce the fire hazard in Cleveland is that requiring the installation of fire-resistive enclosures for existing open shafts, by June 27, 1950.

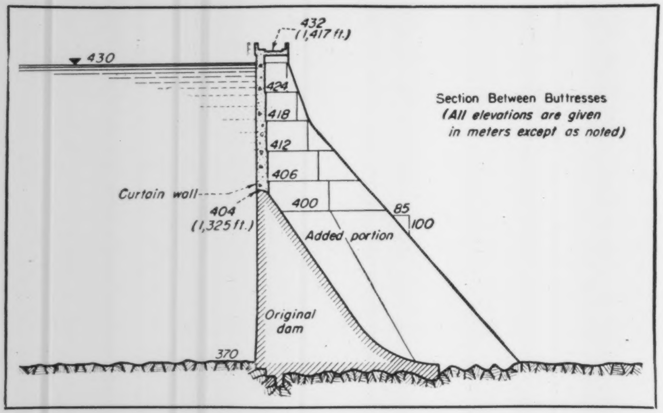
Plumbing, heating and electrical wiring are required to be installed by licensed craftsmen, except that the work may be done by the home-owner if he chooses, under the "home-owners'" exception. The National Electrical Code is the basis for approval for electric wiring.

Emil J. Szendy, building code consultant, drafted Cleveland's new building code. City Council was represented by five standing committees which held over 50 public hearings

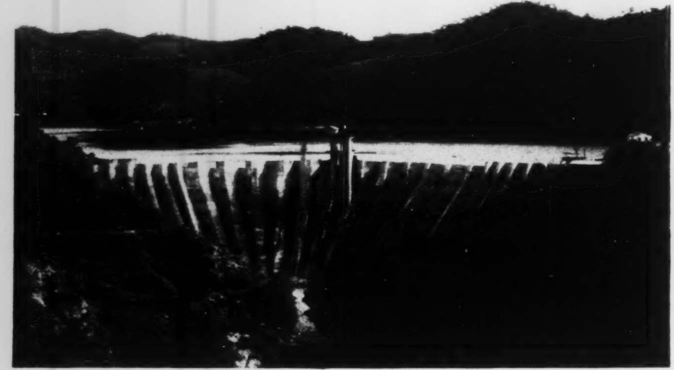
Professor Leslie J. Reardon, Case Institute of Technology, was chairman of the Joint Building Code Committee of Professional Architects and Engineers, which represented the engineering societies in Cleveland.

Lages Dam Is As Rio Power

The original Lages Dam built in 1908 as a major power source in Brazil, is being . . .



Enlarged and reinforced by a system of buttresses that will nearly double its height, and . . .



Now looks like this. Its finished height will be 197 ft.

Capacity of a 41-year old storage reservoir in the power system of Rio de Janeiro, Brazil, is being increased fivefold by the raising of Lages Dam to nearly twice its initial height.

The original structure, completed in 1908, was a 105-ft.-high concrete gravity dam impounding 147,530 acre-ft. of water. When the new work is completed, the dam will be 197 ft. high and will store 852,757 acre-ft.

The old dam, curved with a 328-ft. radius at its upstream face and a 767-ft. crest length, will be 92 ft. higher and bolstered by 26 radial buttresses. Use of these counterforts afforded a concrete saving of 35 percent as compared to an equally high extension of gravity dam.

Situated 44 miles west of Rio de Janeiro and over 1,400 ft. above sea level, the newly formed reservoir will have useful storage capable of producing 738.4 million kwh. annually—over six times that of the original power installation.

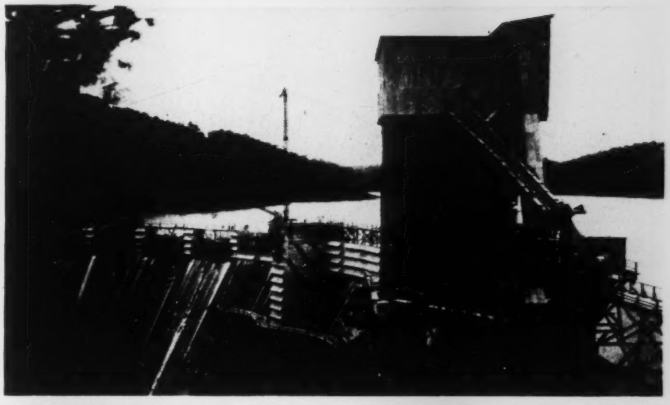
In addition to raising Lages Dam, the owners, Rio de Janeiro Tramway, Light & Power Co., had to (1) bore a hard rock tunnel, 19.7 ft. in diameter and 6,890 ft. long and line it with concrete (a similar future tunnel will parallel this one); (2) perforate the old dam with two large intakes to connect with these tunnels, meanwhile maintaining an adequate water level behind the dam.

(An article describing how the dam was pierced at two points 145 ft. below the lake surface, by working behind a steel caisson sealed on the upstream face, will appear in a subsequent issue.)

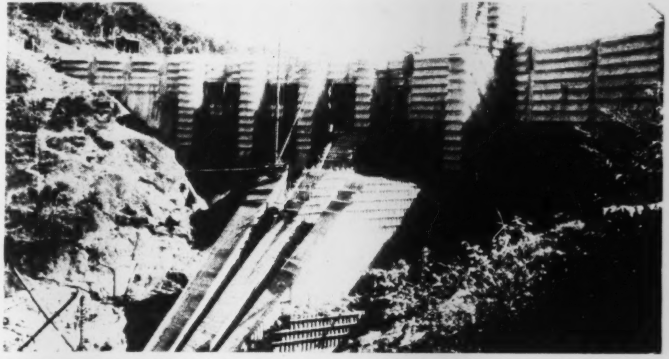
Doubling the height of Lages Dam started in 1940 in anticipation of Brazil's expanded wartime electrical energy needs. Under normal conditions perhaps an entirely new plant would have been constructed near Rio de Janeiro, but the war presented difficult conditions of financing by foreign companies (the owner is a subsidiary of Brazilian Traction, Light & Power Co., of Toronto, Ont., Canada). Improvement of existing plant was the only solution practical for immediate and future needs.

Various designs were considered before it was finally decided to reinforce the original structure and raise the crest, by means of the radial buttresses,

Raised 92 ft. Needs Grow



MASS CONCRETE PIERS such as this were cast on the downstream face of the original structure. Curtain walls atop the old crest raised the surface of the reservoir as work progressed.



PIERS BECAME PART of radial buttresses which slope down to a foundation on solid rock. Derricks placed most concrete; some was chuted down to the lower portions.

haunched against the downstream face of the old dam. O'Shaughnessy Dam in California, successfully raised in 1935-38, served as a prototype for the power company engineers. They consulted L. T. McAfee, chief engineer, San Francisco Public Utilities Commission, and engineers of the Hetch Hetchy Water Supply Department, before completing the redesign. Economy in concrete over that required by a gravity structure, plus the desire to avoid artificial cooling required by monolithic construction, dictated the adoption of the counterfort design.

Main buttresses in the middle of the dam are spaced 49.2 ft. on centers (at the upstream face) and have a maximum thickness of 16.4 ft. Nearer the ends of the dam, buttresses are spaced 26.2 ft. on centers with a maximum thickness of 12.8 ft. Careful consideration was given to proportioning these members so as to use the least amount of concrete and thus avoid cracks due to excessive hydration heat. Stress considerations used in the design of the prismatic heads on the buttresses eliminated the necessity of any reinforcing steel.

The factor of safety against sliding determined the downstream slope of the buttresses. The original dam is keyed into a solid gneiss foundation, and this was roughened to receive the buttresses as additional insurance against sliding.

As the first step in raising the old dam, a concrete platform was constructed at crest height on the downstream face of the structure. This platform supported crushing, screening and mixing plant and rock bins during construction.

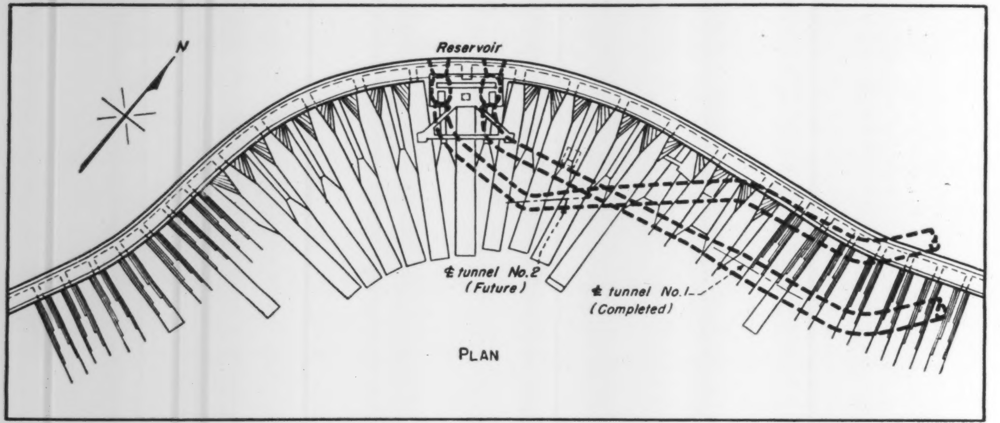
The work of raising the crest began at once. So far as was consistent with safety, raising of the crest actually preceded construction of the supporting buttresses. This procedure permitted increased storage during construction and prevented spill over the dam from interfering with foundation and tunnel work that was being carried out under the toe of the structure below.

A trestle carrying a narrow-gage track was installed along the top of the old dam. Guy derricks were placed along the trestle, and concreting began by first building piers up about half the height of the ultimate extension on the center lines of the proposed buttresses. Curtain walls 9.8 ft. thick, were then built between piers. Where piers and walls rested on the sloping overflow face of the original dam, notches were cut in the old concrete, and steel dowels were grouted in to improve bond.

Completed piers later became cores of the upper parts of the buttresses. Downstream sides of the piers and curtain walls, which later were to be backed by the buttresses, were formed as teeth with faces normal and parallel to the line of thrust to be carrier through the finished counterforts. A piping system was embedded for later grouting of the contact surfaces between the piers and curtain walls and the buttresses.

Expansion joints in the curtain walls were spaced midway between center lines of buttresses. One face of each expansion joint was coated with a

AGGREGATE STORAGE BINS were built on the old dam's crest. The original outlet works is on the lake's surface; the new tunnel outlet appears in foreground.



HOLES PIERCE OLD DAM to serve as portals of the two tunnels which will deliver water to the power station. Radial buttresses at center of dam are on 49.2 ft. centers. Smaller buttresses at dam's ends are spaced each 26.2 ft.

$\frac{3}{16}$ in. thickness of hot pitch and tar paper. Each joint was provided with four transverse seals: one rubber strip, 9 in. wide and $\frac{3}{8}$ in. thick; one copper strip, $11\frac{3}{4}$ in. wide by $\frac{1}{16}$ in. thick; and two $5\frac{1}{2}$-in.-square vertical wells (with one diagonal coinciding with the face of the joint) which were later filled with hot pitch. Expansion joints extend downward to the crest of the old dam.

Separation at the contact plane between the buttresses and the old structure – resulting from cooling and shrinking of concrete in the buttresses or from changing stresses in the old dam—was anticipated and avoided in the design.

Upstream faces of buttresses were separated (for about 85 percent of their area) from the downstream face of the old dam by two continuous hollow cells, extending the full height of the original structure. These cells were left empty for nearly two years while the concrete of the buttresses cured. Buttress construction began late in 1941, and it was not until early 1944 that these cells were concreted. Then about one year later, grouting was completed on two of the buttresses; a system of grout pipes with outlets at upper faces of the cells had been originally embedded in the concrete. Cells in the remainder of the buttresses were to be grouted subsequently.

Construction of piers, curtain walls and buttresses proceeded in stages up to February, 1948, when construction stopped with the main structure completed only up to El. 426 (measured in meters), just short of its ultimate 432-meter crest elevation. It is not anticipated that the water level will rise above 422 meters until 1951, when additional supplies are added to the reservoir. By that time the structure will have been completed.

When work was discontinued on the main structure, a total of 154,850 cu.yd. of concrete had been placed atop the original dam of 88,940 cu.yd. Cut-off walls had been extended well into the hillsides at the ends of the dam. Two emergency spillway openings, each $24\frac{1}{2}$ ft. wide, have been left near the center of the structure. During the course of the work, the sills of these openings were kept $6\frac{1}{2}$ ft. above the anticipated maximum water level of the reservoir. These openings will be closed completely when the dam is finished. The old dam had a spillway at its center; the new structure will have no spillway and will discharge entirely through the openings in the original dam, connected by tunnel to the power installation.

Local materials used

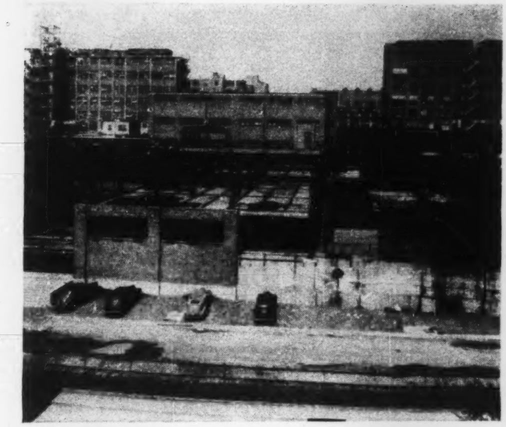
Materials used in the concrete was locally available. Cement was manufactured in Brazil, and the bulk of aggregate used was crushed rock excavated from the delivery tunnel. This material was screened to three different sizes: coarse stone passing a 3 in. screen and retained on a 1 in. screen; fine stone passing a 1 in. screen and retained on a $\frac{3}{8}$ in. screen; and artificial sand from a hammermill, passing a $\frac{3}{8}$ in. screen. About 3 percent of this sand would pass a 200 mesh sieve. Sand was sampled several times daily, and the percentage passing different sieves was kept within prescribed limits by regulating the breaker plates of the hammermill as required.

Materials for concrete, including water, were batched by weight. The mix called for 250 lb. of cement per cubic yard of concrete and a water cement ratio (by weight) of 1.0. Average 28 day compressive strength obtained in the concrete was 2,100 psi. In the curtain walls the mix used had 317 lb. of cement per cubic yard and a water cement ratio of 0.96; this made 2,800 psi. concrete.

Concrete handling methods

Concrete was generally deposited directly in the forms from bottom dump buckets handled by the derricks. Occasionally it was chuted to lower levels through 12 in. steel pipes. At the end of a day's pour the surface of the concrete was left at about a 5 to 1 slope, sloping upward toward the downstream edge. Keys were left in this sloping surface, and before fresh concrete was placed on a hardened surface, the old concrete was roughened by hammers, cleaned with compressed air and water jet, and flushed with cement mortar.

A. W. K. Billings, then vice-president of the Rio de Janeiro Tramway, Light & Power Co., was in general charge of the project through the major portion of its construction. Also for the power company, W. L. Zeigler was chief civil engineer, J. G. Hollman was general superintendent of construction, and F. Knapp was structural design engineer. E. G. Hanson was superintendent of construction in the field.



Steel rises over filter units . . .

To form structure that will be

An Office Building Over a Water Plant

Engineers for the Tennessee Eastman Corp., at Kingsport, Tenn., had a peculiar problem: They had to build both an eight-story office building and a complete water filtration plant, and they had only one site on which to build them.

The solution sounds simple enough—erecting the office building on top of the filtration plant—but the engineering problems involved are unusually complex.

Column loads range as high as 1,400,000 lb. Girders are omitted from where they would normally be placed because of the settling basins and tanks. Requirements for the finished water are unusually high. And entrances and normal first-floor components of the office building are laid out to accommodate the plant beneath.

The structural problems presented by a 960,000 gal. clear well beneath eight 1.5-mgd. filters arranged in two banks were not particularly unusual. Placing a chemical storage and handling room on the floor directly above the laboratory and chemical feeder room required heavier, but nevertheless ordinary, structural design. However, the decision to design for an eight-story building that would cover not only the filters, laboratory and chemical area, but mixing and settling basins as well, brought with it complications.

The architects estimated tentative column loadings for the engineers, who determined preliminary sizes for concrete piers, pilasters and footings. Uniform exterior wall lines and final column spacing were then decided upon in joint conference.

Preliminary calculations indicated that the steel columns for the building should start at the top of the filters and basins and at the corresponding floor level in the chemical-feeder room and mixing basin portions. Superstructure loads would be transferred through reinforced concrete piers or pilasters constructed integrally with basin and building walls to reinforced concrete footings below the clear well and basin floors.

The clear well beneath the filters rests on rock. Pier foundations for the mixing and settling section are also carried to rock, although ground conditions would permit bearing of 5 tons per sq. ft., because of the exceptionally heavy loads from the floors above.

Since the use of piers or columns inside the mixing and settling basins would interfere with treatment processes, heavy trusses were placed across the two sets of basins to receive intermediate columns that carry superstructure loads.

A tremendous difference in unit footing pressures, resulting from heavy column loads and the comparatively light loads transferred from filter to walls, led to a design that transferred all panel loads to walls and the wall reactions to piers and their respective footings. Filter and gallery walls were extended through the clear well. However, to resist the uplift reaction against the slab from high water of the nearby Holston River, filter walls were designed as beams between piers.

Because of provisions for sludge-collecting mechanisms, no tie beams could be used in the settling portion of the basins. Exterior walls and the division wall between basins were, therefore, designed as cantilevers for fluid pressure.

The design method for the cantilever basin walls was determined after consideration of what additional overturning forces might be caused by water leakage through the construction joints, or through any cracks that might develop. The forces finally decided upon as sufficient to resist overturning included the dead-load couple of concrete wall and footing, and a tensile couple provided by floor reinforcing located about 10 ft. above the base of the foundation.

Mixing-basin floors were tied vertically into the dividing walls, which also serve as vertical beams to carry the entire dead and water load to supports.

Filtration plant

The filtration plant, already in operation, is fed by five pumping stations located on the Holston River. The raw river water entering the new plant is mixed with waste hot water and is automatically held to a predetermined temperature usually 90 to 93 deg. F.

The influent then passes through a butterfly-valve flow controller, which keeps a constant level in the settling basins and filters. Alum, lime and chlorine are introduced immediately ahead of the flash mixers, the alum and lime feeders being the proportioning type. Coagulation is done at pH 7.1, and chlorination is carried to the breakpoint stage. Activated carbon is added as desired in the flume leading to all filters.

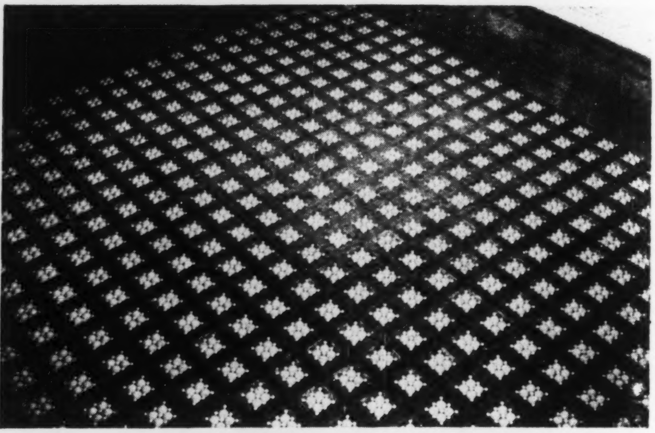
The first half of each 540,000-gal. settling basin is equipped with a 49-ft. 8-in. dia. clarifier, with provision for a second unit, if required. Automatic desludging valves, under time-cycle control, discharge at intervals to the sewer. Usually a settling basin can stay in operation for six months before cleaning becomes necessary.

Wheeler bottoms are installed in the filters, each equipped with four filter sweeps that reduce the time required for back washing by one-third. All filter operating valves are hydraulically controlled from the standard-type operating tables, no foot valves being used.

Two 5,000 gpm. clear-well pumps, with room for a third unit, and a 12,000-gpm. backwash water pump are located in the pump room beneath the laboratory and the chemical feeder room.

Lime, alum, and activated carbon are unloaded from railroad cars to an elevator and then to the chemical storage rooms by power-driven materials handling equipment. Chlorine is received in carload shipments of one-ton cylinders, handled by a job crane and a hoist on a monorail on the way to the storage platform and the scale room.

Wiedeman & Singleton, Atlanta, Ga., designed the water filtration plant and its foundations. Allen N. Dryden, Kingsport, was the architect. Excavation and foundation work was performed by Walter & Prater, general contractors of Morristown, Tenn. The Bays Mountain Construction Co., a subsidiary of Tennessee Eastman, handled all other general construction work.



PATTERN is formed by Wheeler bottoms installed in each of the water plant's filter units. Consisting of iron spheres in tapered holes, they will be covered with gravel.

Survey economies of filter plant

With its new South District filtration plant in full operation during the latter part of 1948, Chicago recently surveyed the economics of the plant's operation.

According to H. H. Gerstein, chief filtration chemist, the plant moved about 117 billion gallons of water during the year through its low-lift pumps, an average of 319 mgd. The total filtration was only slightly less than the amount of water pumped. Maximum hourly flow leaving the plant's clear-water reservoirs was at the rate of 512 mgd. during a prolonged hot spell in August.

An accounting analysis shows that unit cost of treatment was $10.68 per million gallons. Price rises for processed chemicals, supplies, fuel, electric power as well as more intensive treatment resulted in costs close to 25 percent higher than in 1947. The $10.68 figure is broken down to nearly half for salaries, the remainder going to other components.

Average cost of electric power was .608 per kilowatt, 5.7 percent higher than the previous year. Average cost of chemicals was $3.21 per million gallons.

Meanwhile, the laboratories examined a total of 200,000 samples for chemical, bacteriological and control purposes. A brief summary of results of some of the laboratory examinations on the raw, settled and plant outlet water showed that coliforms per 100 ml. were reduced from 57.4 percent raw to 0.0048 at the plant outlet; turbidity was reduced from 9.4 ppm. raw to zero at the plant outlet.

British report results of water pollution research

A detailed report on research work conducted by the British Water Pollution Research Laboratory is now available.

Covering water pollution research in 1947, the report deals briefly with the results obtained in some of the investigations, and the report of the director of research gives a more complete survey of the work on treatment of water, sewage and industrial effluents, and on the effect of pollution of natural waters.

Among problems considered was the effect of chlorine in water supplies on brass fittings. Tests, using hard and soft waters, were made and the board concluded that chlorine in concentrations used in waterworks practice has no decisive effect on fittings made of cast brass, but did increase corrosion in valves made of hot-pressed brass.

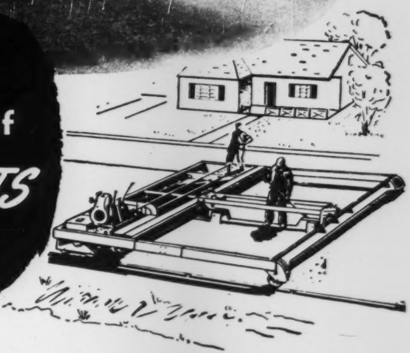
In the field of sewage treatment the board is carrying on large-scale experiments at Birmingham and Coventry to determine effectiveness of alternating double-filtration and by filtration with recirculation of effluent.

In the field of industrial wastes, one matter taken up in considerable detail was the investigation of treatment of waste waters resulting from cider manufacture.

Other industrial wastes studied were from slaughter houses, manufacture of dyestuffs, electroplating, and dyeing and finishing of textiles.

The report is available from the British Department of Scientific and Industrial Research, 4-12 Regent St., London, S. W. 1.

HOUSTON doubles its yardage of *CONCRETE PAVEMENTS* in three years



Metropolitan Houston, one of America's fastest growing areas, is engaged in one of the biggest urban concrete paving projects ever undertaken in the U.S. Within the last three years contracts were awarded for 2,368,997 sq. yd. of concrete streets and alleys, including 366,265 sq. yd. in Houston's great new expressway, shown above.

This gigantic paving project increases by 2½ times the yardage of concrete paving existing in metropolitan Houston in 1945, when there were 1,555,148 sq. yd. of concrete streets and alleys.

In selecting concrete for residential, commercial and arterial streets, metropolitan Houston is providing for today's needs and for expected increases in traffic weights and volumes. For instance, when the first section of the new expressway was opened, traffic volume was 28,000 vpd. It rose rapidly to more than 40,000 vpd. and is expected to reach between 55,000 and 60,000 vpd. when the expressway is completed.

City officials all over America know that concrete usually costs less to build than any other pavement of equal load-carrying capacity. Concrete pavements last longer and need less maintenance. Result: ***low-annual-cost*** service.

For more information in planning your street-paving program write today for a free copy of *"The Design of Concrete Pavements for Municipal Streets."* Distributed only in the U. S. and Canada.

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Chemical Stabilization of Sand Speeds Driving of 10-Ft. Tunnel

Roy E. Wright
Philadelphia Quartz Company of California

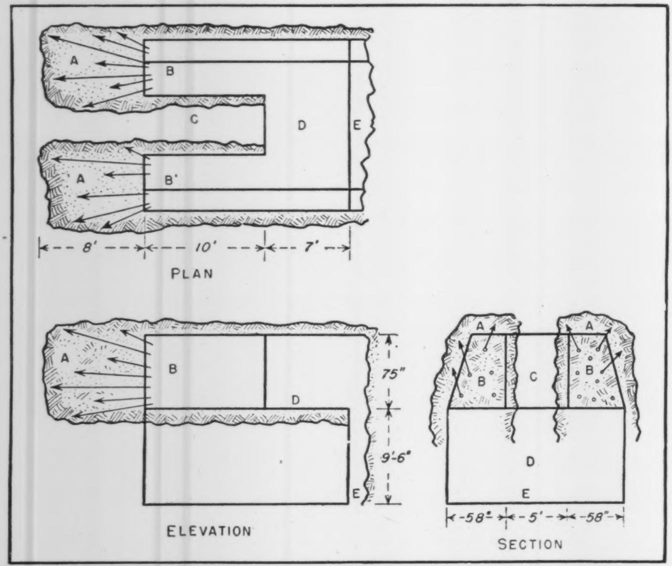
Dry, flowing sand, even coming through small cracks between lagging and breast boards, slowed driving progress on a storm-water tunnel until the sand was stabilized by chemicals. The bore, which has a 10-ft. horseshoe section and a length of 2,700 ft., is being driven for the city of San Francisco to carry storm water from the Lake Merced district to the Pacific Ocean.

The character of the material traversed could not be predicted accurately from test borings, because formation changes occurred sometimes at 5- or 10-ft. intervals. There was no difficulty in tunneling through hardpan, gravel or clay. In traversing dry sand, however, the bore tended to fill with inflow through even the smallest openings and load on the timbers was sufficient to bend 10x10-in. posts.

Under these conditions, drift faces had to be completely breast-boarded, holes plugged and great care taken to prevent sand from flowing in more rapidly than it could be removed. This situation was completely changed by injecting a chemical mixture that changed dry sand into a firm, self-supporting formation which was, however, not so hard as to require air spades or to present any difficulty in removal.

In fact, condition of the treated sand could be varied from rock-hard to very soft by changing the proportions and the chemical agents used. After treatment, the sand flow stopped. relatively few breast boards were required and the load carried by the timbering was greatly reduced.

The chemical used was sodium silicate, with a reacting agent in the form of sodium bicarbonate. Proportions were adjusted by the manufacturer to give a delayed set, following injection, ranging from a lapse of 40 to 80 min. after admixture. This amount of delayed set eliminated danger that the solution might set up in the pumps or injection lines.



Sketches showing heading-and-bench scheme by which tunnel face was advanced. Arrows show how injection needles were fanned out; cross-hatching (A) indicates sand areas impregnated with stabilizing chemicals.

Because of the emergency nature of the work, 55-gal. drums of the chemicals were first taken down into the tunnel, set up on racks, and the solutions measured and transferred by buckets directly from the drums to the mixing tanks. This method was laborious, more expensive in labor cost and the accuracy was less than where the solutions could be run directly from storage to mixing tanks as these were later arranged.

The contractor soon arranged an improved setup by which chemicals were delivered by truck directly to storage tanks above ground connected by pipes with mixing tanks in the tunnel which were moved from time to time to be kept as near the face as practicable. (Tank truck delivery would have saved unloading expense if storage tank capacity had been large enough.)

Under this improved setup, one man in the tunnel was able to measure the solutions from storage into mixing tanks, see that the mixture was correct and that the pump was operating properly. A second man at the face of the tunnel did the actual injection, placing the needle at the proper points, regulating the flow of solutions by means of a plug valve at the connection between the needle and the hose and moving the needle in or out to obtain uniform saturation in the area to be treated. The needle used was a 10-ft. length of ½-in. iron pipe.

In the accompanying sketch, A shows stabilized sand areas in which direction of needle thrusts are indicated by arrows. Note that fanning was both vertical and horizontal. B and B¹ are right and left drifts at the tunnel face. C is the core over the top of which it was found unnecessary to stabilize except in a few very bad spots. D is the bench and E the tunnel floor.

The volume of solutions needed depended on the amount of moisture and water in the sand, the percentage of voids, and the amount lost to surrounding areas by leakage. Conditions in this tunnel were such that the amount of combined solution required for stabilization varied from 30 to 45 gal. for each cubic yard solidified.

Penetration of the solutions into the ground depended on pore size, injection pressure and time. Using pressures of 200 psi. at the needle and an injection time of about a minute per insertion, the method solidified the ground for a radius of about 1 ft. around the point of discharge. As operators gained experience and improved technique, they were able to solidify areas quite accurately and avoid waste of materials. Pressures and time for injection at each point were changed to suit the ground treated.

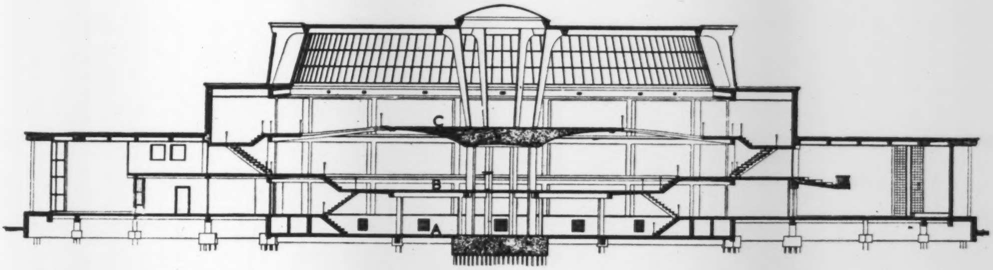
All apparatus used was simple and inexpensive; for the most part it was assembled from surplus in the contractor's equipment yard. The solutions were injected by an air-operated, reciprocating piston pump driven by 100-psi. air. A pressure of 200 psi was maintained behind the injection needle. The two 55-gal. mixing drums supplied the chemical, under these conditions, for a 10- to 15-min. injection period for each drum, thus permitting one to be charged while the other was being discharged. No hazard was involved in the use of the chemicals as their action on workmen was similar to that of very strong soap solutions.

Different types of sand required different treatment. Where the sand was very free flowing, exerting heavy load both vertically and laterally on the timbering, an arch was solidified over the upper part of the tunnel and along the sides. This arch relieved strain on the timbers and prevented fracture or bending. Other formations required less treatment overhead and sometimes none on the sides.

In most cases where free flowing sand was traversed, the entire face of each drift was solidified, usually for a distance up to the length of the needle ahead of the face. This prevented any sand from flowing into the drifts. The core areas and bench of the tunnel were seldom treated because they were protected adequately by timbering. Best results were obtained by repeated injections and solidification before driving all the way through previously treated ground. This method provided a barrier of solidified material to hold back sand during later injections and gave a longer time for curing and setting of the solidified sand, increasing its strength.

An advantage of the method here employed was in the feasibility of intermittent use. No treatment was required in clay, gravel or firm sand formations. While traversing these materials the chemical equipment remained idle without deterioration of supplies or lost investment on expensive equipment, reports on the process show.

The work was carried out for the city of San Francisco, H. C. Vensano, director of public works. The contractor was the M & K Corp., B. F. Modglin, president; Fred Burrows, general superintendent; Einar Benson, tunnel superintendent. Roy C. Hackley was consulting engineer for the contractor. Proper proportions of chemical admixtures were worked out by the firm that supplied the chemicals, the Philadelphia Quartz Company of California.



RIGID FRAMES RADIATE from the center of the circular building industry headquarters in Rotterdam.

Advertise Dutch Building Industry In Uniquely Designed Structure

Bouwcentrum means "building center," and The Netherlands' Bouwcentrum at Rotterdam is unique in both design and purpose. Built up on radial rigid frames and cantilevers, the circular building is designed for maximum display space for permanent exhibits, by and for the promotion of the building industry both in The Netherlands and abroad.

The unusual reinforced concrete structure houses an institute set up as an information and display center for builders. Exhibits on three floors fall into three departments: (1) scientific and technical, (2) industrial and trade, and (3) sociological and architectural.

Framed to make available the most space unbroken by columns or partitions, the structure's roof rests on asymmetrical rigid frames with their short outside columns cantilevered on mezzanine roof framing below. The rigid frames permit an unbroken glass wall to ring the entire upper story by extending outside the limits of the building.

Main columns supporting upper floor areas are arranged in one tight circle of eight and two outer circles of 16 columns each. Upper floors ring a ground floor rotunda broken by stairs, ramps and a circular third-floor area.

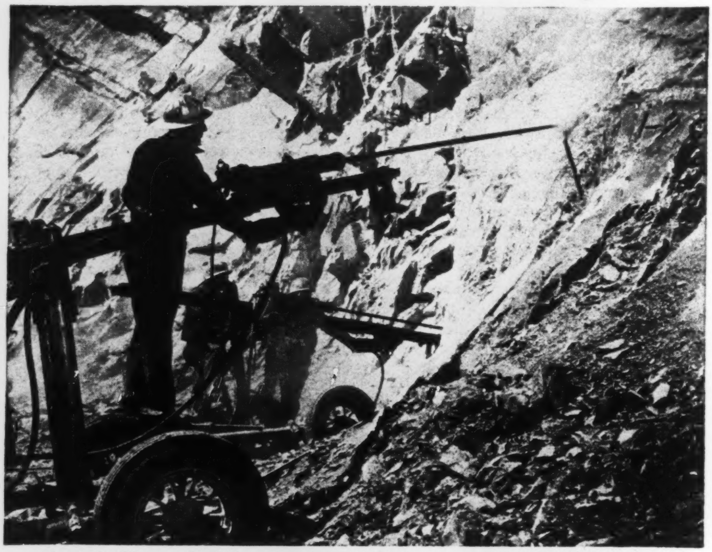
Columns vary in length and area dimensions, but all go to pile foundations slightly below grade. A single pile cap under the building's center is a combined footing for the eight central columns.

In addition to display space, the building has a kitchen, a cafe, restaurant and office space.

Information centers offer the following services: sociological, economic, town planning, architectural and technical documentation; an office for international relations within the sphere of the building industry; a general planning office; and direction and administration offices. A board of directors, assisted by a supervisory committee, is charged with the organization of the building center. Board and committee members are building experts with no commercial interest in the institute, which was founded on a non-profit basis. The building institute has been made possible by the public-spirited financial aid of several institutions.

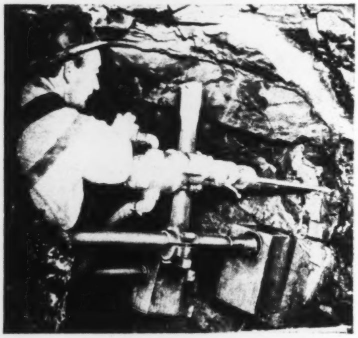
CP at Hungry

CP rock drills at Hungry Horse



G-200R Wagon Drills, mounting 4" drifters, run 24-foot blast holes.

CP-42 sinker drills are used on the keyway.



A battery of CP-55 Diamond Drills is employed for blast hole drilling in the spillway tunnel — 955 feet through solid rock. CP-55 Diamond Drills are also used for blast hole drilling of the keyway area.

Horse

HUNGRY HORSE DAM—
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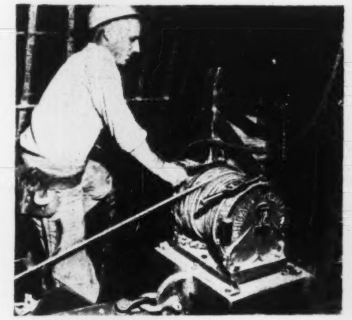
Batteries of CP Wagon Drills and Diamond Drills . . . CP Sinker Drills in gangs . . . a building full of CP Stationary Compressors . . . CP Portable Compressors in mobile service . . . CP Pneumatic and Electric Vibrators . . . and CP Pneumatic Tools are working around the clock.

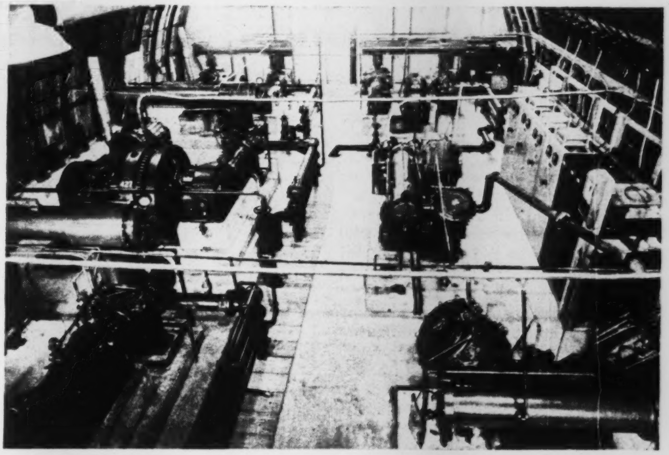


CP Pneumatic Winch

To maintain work on a 24-hour basis, one hundred sixty 1500-watt flood lights, in two series, are stretched across the 2100-foot canyon, on an endless cable. This is powered by a CP Pneumatic Winch so the lights can be pulled in for re-lamping.

CP Pneumatic and Hicycle Electric Vibrators

CP Vibrators, of both electric and pneumatic types, will be used to place the nearly three million cubic yards of concrete.



Six CP Stationary Compressors furnish the air supply

The main air supply is provided by a stationary compressor plant, where four Type O-CE Compressors and two Type Y Compressors furnish 7010 cfm. of air at 100 p.s.i.

In addition, there are six CP Portable Compressors—five of 500 cfm. capacity and one of 105 cfm.—used for mobile operations.

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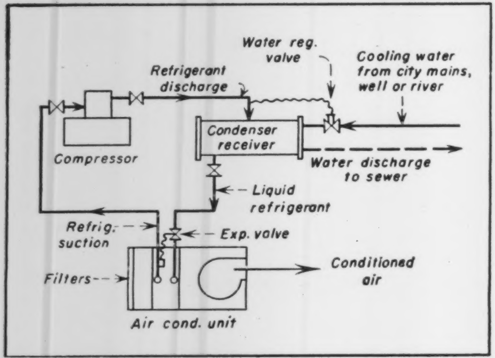

FIG. 1. REFRIGERATION SYSTEM in which the air stream is cooled directly by refrigerant and warm water wasted.

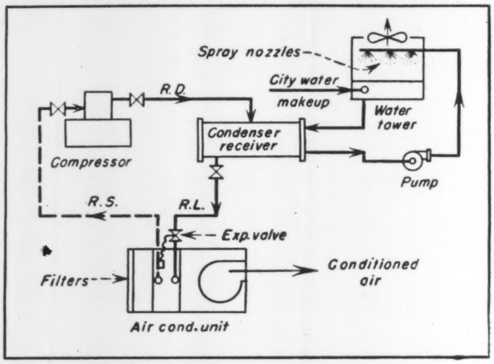

FIG. 2. DIRECT EXPANSION TYPE in which the warm water is cooled in a water tower.

How to allow for . . .

Future Air Conditioning of New Buildings

Ralph Torop
Chief Engineer,
Coldstream Conditioning Corp.
New York, N. Y.

When air-conditioning systems are planned for existing buildings, certain difficulties continually recur. These can be avoided, however, by providing for air conditioning in the original building design. In addition, advance planning will preserve the architectural treatment and save the owner money by making possible a more efficient installation.

In planning for future air conditioning, space must be apportioned for equipment and ducts, and enough room must be allowed for installing them. Shafts must be provided for pipe risers. The adequacy of the supply of fresh air for interior zones and of electricity, steam and water should be investigated. And consideration should be given to preventing exhaust air from contaminating supply air.

The accompanying simplified diagrams show a few combinations of equipment commonly used in air conditioning. Each has certain advantages over the others, depending on the problem involved.

Fig. 1, 2 and 3 show direct expansion systems, in which the liquid refrigerant is expanded in the cooling coil and cools the air stream directly. Fig. 4 illustrates a chilled-water system for an indirect cooling system. Here, the liquid refrigerant is expanded in a water chiller, while a pump circulates the chilled water through the cooling coils.

In general, chilled-water systems are more expensive to install and operate. However, they are useful in some cities where ordinances require indirect refrigerating systems for such places as night clubs, theatres and various types of industrial buildings.

Estimated space and power needs

Accompanying tables give approximate operating weights and space requirements of some commonly used air-conditioning equipment. Obviously, specific equipment will vary in weight from these figures. But if provision is made in the original building design for structural supports for the equipment, the slight differences that might exist will not create any great difficulty. Trouble will usually occur when no consideration at all is given to the support of equipment.

Most compressor and motor combinations require about 20 sq.ft. of floor area and about 4 ft. of height, including the space required for access and service. Two or more compressors are generally combined when loads exceed 60 tons refrigeration. For loads above 150 tons refrigeration, centrifugal compressors are often used, in which case specific data on space and weight requirements should be obtained from the manufacturer.

Electrical power requirements may be roughly estimated after the cooling load of the building has been obtained. For the compressors, 1 to 1¼ hp. per ton is usually required. Fans will take about 0.2 hp. per ton, the actual load depending upon the size of the system, the ratio of sensible to latent load, and the resistance of the duct runs and coils. Evaporative condensers, without the ductwork, usually require about 0.1 hp. per ton of refrigeration.

Water tower pumps and water chiller pumps are difficult to estimate due to the effect of length of pipe run on pumping horsepower. Average installations run about 10 to 15 percent of the refrigeration horsepower for each pump.

Steam generating plants must compensate for heat loss through the structure and cold air infiltration through doors and windows. Also when winter air conditioning is supplied, they have to heat the fresh air supply from the outside temperature to the inside temperature. These additional loads on the boiler should be provided for at the time of choosing a heating plant.

The amount of heat required for fresh air can be obtained from

$$Q = \frac{1.08\,C\,T}{h}$$

where Q is the number of pounds per hour of steam required, C the fresh

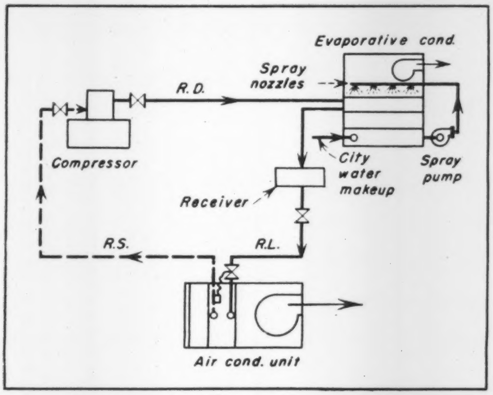

FIG. 3. **A THIRD SYSTEM of the direct expansion type, except that an evaporative condenser is used.**

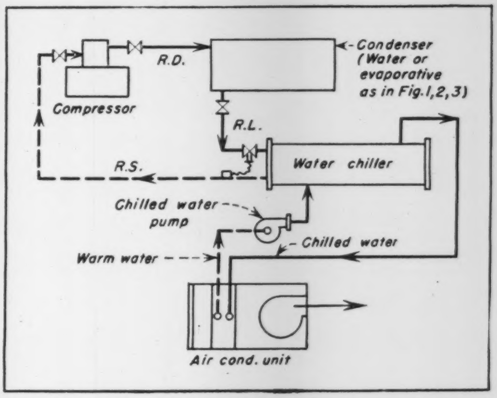

FIG. 4. **INDIRECT TYPE—Water chilled by the refrigerant is circulated to cool the air.**

air supply in cfm., T the temperature rise of air from outside to inside in deg. F. and h the heat of vaporization of steam at the operating pressure.

APPROXIMATE WEIGHT AND SPACE REQUIREMENTS OF EQUIPMENT

EVAPORATIVE CONDENSERS

Approx. Cooling Load (Tons)	Operating Wt. (Lb.) 76 deg. W.B.	Floor Area (Sq.Ft.)	Height (Ft.)
20	3,000	30	8
30	4,500	45	8½
40	5,500	55	9
50	7,000	65	10
60	8,000	75	10
80	10,000	90	10
100	12.500	115	10

WATER TOWERS

Approx. Cooling Load (Tons)	Operating Wt. (Lb.) 76 deg. W. B.	Floor Area (Sq.Ft.)	Height (Ft.)
75	12,500	100	15
100	15,500	125	16
125	17,500	150	16
150	22,000	180	17
200	30,000	220	17

WATER CHILLERS (8 deg. F. temperature rise)

Approx. Cooling Load (Tons)	Operating Wt. (Lb.)	Overall Length (Ft.)	Overall Diam. Insulated (In.)
20	1,500	15	14
30	2,500	13	18
40	2,700	17	18
50	3,500	17	20
60	4,100	13	24
80	5,000	17	24
100	5,800	15	28
125	7,200	17	28

WATER CONDENSERS (85 deg. F. to 95 deg. F.)

Approx. Cooling Load (Tons)	Operating Wt. (Lb.)	Overall Length (Ft.)	Overall Diam. (In.)
75	2,100	15	16
100	2,500	15	20
125	2,800	15	24
150	3,000	15	24
200	4,300	15	28
250	4,800	15	28
300	5,800	15	34

The quantity of fresh air supplied to sparsely populated air-conditioned buildings is usually about 1 or 1½ air changes per hour. For more densely populated structures, it varies from 5 to 20 cfm. per person, depending on the type of labor performed. This fresh air creates a slight static pressure, which generally halts infiltration of air through cracks in windows and doors, thus eliminating the heating load due to infiltration losses when winter air conditioning is not contemplated. This static pressure actually causes exfiltration of air and prevents discomfort due to drafts in areas close to doors and windows.

When water economizers are not used, as is the case in Fig. 1, the quantity of water usually required is 1.5 gpm. per ton of refrigeration, assuming the water temperature at 75 deg. F. or lower and sufficient condenser area to allow a temperature rise to 95 deg. F. When colder water is available, either from streams or city mains, less water will be required.

Consultant to compute a cooling load

After preliminary architectural plans have been completed, a consulting air-conditioning engineer should be engaged to calculate the probable cooling load on the entire building and each floor or zone separately. At this stage, some thought should be given as to the type of system that will probably be installed.

The final installation need not be as planned originally. When adequate space, structural supports, and air, water and power supply are provided, it is surprising how flexible the structure becomes for the various types of air-conditioning systems and various cooling and heating loads due to changes in building occupancy.

Once the cooling load has been calculated and the type of system selected, a proper zoning method should be determined. (Each floor is divided into areas that will be serviced by one or more air-conditioning units and duct systems.)

Where to put equipment

Consideration should then be given to the best locations for equipment.

It is common practice to place compressors in the basement, because of the relatively heavy foundations required, and water condensers and pumps are usually located in the same room.

Evaporative condensers and water towers are usually set in the open, due to the large volumes of air required by these units, which would necessitate large ducts if placed indoors. Where ample ground space is available, these units should be placed on the ground near the compressor room, provided the large volumes of warm moist air discharged will not cause discomfort to neighbors, nor be taken into the fresh-air ducts to the air-conditioning units. Next in preference are locations on low extension roofs, and finally high roofs. The greater the distance of the evaporative condenser from the compressor, or the water tower from the water condenser, the greater will be the pressure drop and consequently, the greater the operating cost.

Provision of roof supports

When water towers or evaporative condensers are to be placed on a roof, provision for structural supports should be made in the initial design of the building. This may not be so necessary where the structure is only about 20 or 30 ft. wide and the equipment may be set on steel beams spanning the parapet walls. However, in the case of large flat buildings, the distance between parapet walls is too great for beam supports. In such instances, use may be may of corners or other intersecting parapet walls; but this may be objectionable architecturally, because of unsightly equipment facing the front of a building, or mechanically, because of long piping runs on the roof to reach the equipment. A more logical solution is to extend one or more columns through the roof a few feet to take a short horizontal beam in the future. This can most easily be done during initial construction of the building.

Another advantage of advance planning is that less trouble in locating fresh-air intake and air-exhaust shafts will be encountered if provision is made for future fan-room installations. This will make unnecessary long duct runs at the ceilings of interior spaces, or unsightly sheet metal stacks and goosenecks where they interfere with the decorative treatment of the building. Furthermore, a well-designed system of air shafts reduces installation cost by making possible lower sheet-metal costs and smaller air-handling equipment, and it cuts operating costs by offering lower resistance and horsepower requirements.

Condensation can be prevented

Still another point in favor of providing for future air conditioning is that where winter humidity control is required the nuisance caused by excessive moisture condensing or frosting on the windows can be avoided. For example, where the premises are to be held at 72 deg. F. and 30 percent humidity (dew point about 39 deg. F.) and the outside temperature drops to 20 deg. F. or less, the interior glass surface may drop below the dew-point temperature of the interior air. The condition is very similar to a distillation process. Water will be continually removed from the air by condensation on the cold glass surface, while the humidistat will keep the water or steam nozzles going in a vain effort to maintain the humidity for which the control was originally set.

An obvious solution is to raise the interior glass surface temperature. This can be done readily with storm windows or patented double-glazing. Either installation would have the additional advantage of cutting down the heat loss for winter heating and the heat gain for summer cooling, thus, lowering the initial cost of the air-conditioning system by reducing the required capacity of heating and cooling plants.

Here again, money can be saved by planning for the future. It is usually much cheaper to provide a sash-storm window combination initially than to try to fit storm windows or a new type of glass a few years later.

New Swedish Surveying Tripod Permits Centering of Instruments

A new tripod permitting combined centering and leveling of surveying instruments equipped with optical plumb indicators has been designed under the auspices of the Royal Institute of Technology of Sweden, according to a report released to the American public by the Office of Technical Services of the Department of Commerce. Leveling screws for the instrument are provided in the tripod itself.

In principle, the design varies from conventional types in that the axes of the leveling screws are coincident with the longitudinal axes of the tripod legs instead of being perpendicular to the horizontal circle of the instrument. When the instrument is leveled, it is said to be rotated about a center which is approximately in the center of the plane triangle defined by the three points on the ground where the tripod feet are placed. This will, in general, also be the location of the survey point over which it is desired to set the instrument.

The improvement claimed is that the instrument, when leveled after being set-up over the ground point with the aid of its optical plummet, will require only a very slight movement to correct for residual centering error. With conventional types, the optical plummet will not indicate even an approximate centering until the instrument is leveled, thus requiring the use of a supplemental plumb bob or a series of successive approximations in setting up.

It is reported that in a test series of 10 combined centering and leveling positions, the average time required per set-up was determined to be 45 seconds.

A detailed mathematical development of the theory of the new design is included in the report, and also an alignment chart which indicates the magnitude of errors in centering, due to varying tripod heights that are necessary in practical use.

This report, PB 95407 "A Method of Combined Centering and Leveling for Surveying Instruments Equipped with Optical Plumb Indicators", is in English, and consists of 28 pages, with diagrams, graphs and tables. It sells for $3.75 in photostat form, $2.00 in microfilm. Address orders to the Library of Congress, Photo-duplication Service, Publication Board Project, Washington 25, D. C. Check or money order should be made payable directly to The Librarian of Congress to be acceptable.

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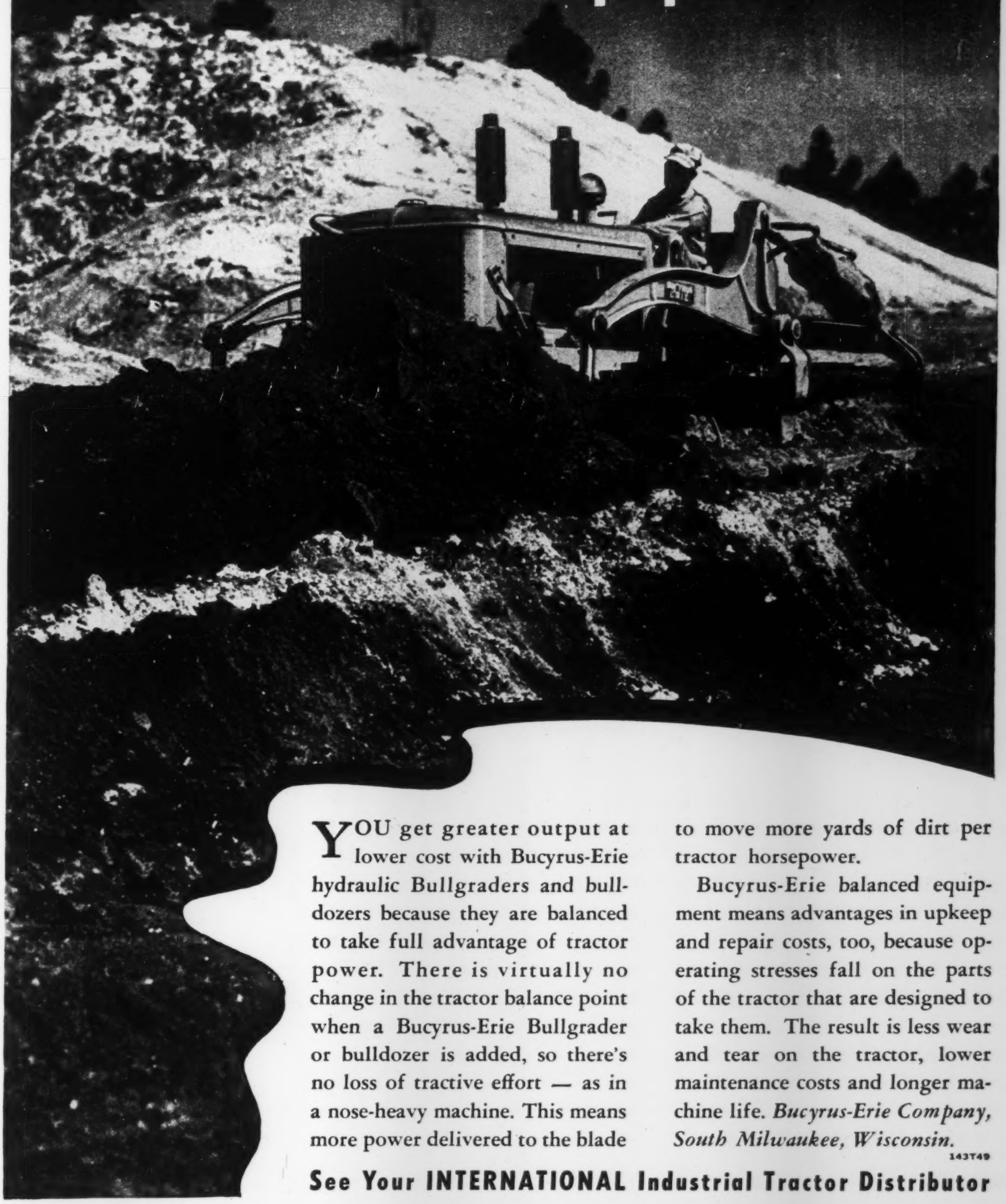

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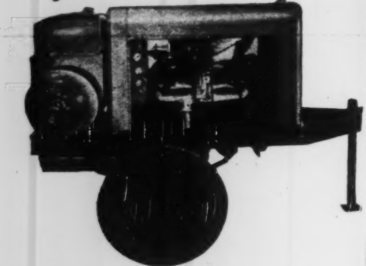

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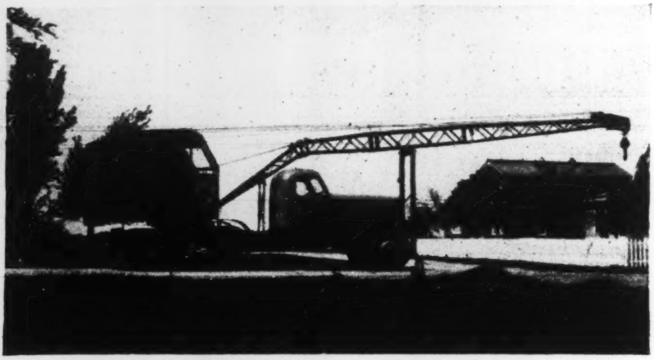
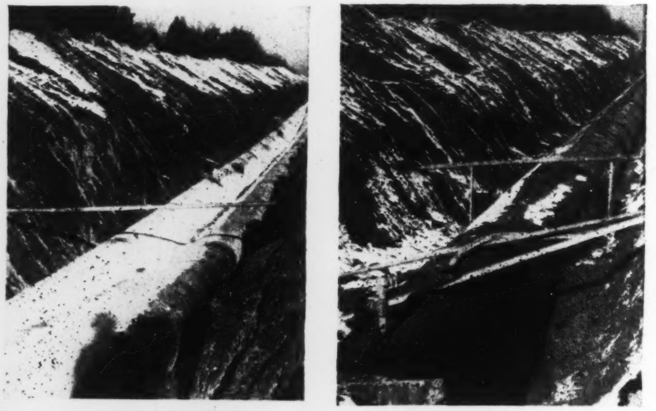


Hinge on Truck-Crane Boom Eliminates Swinging Hazard

An unusual solution to a not-unusual problem—that of mounting a crane on a truck or halftrack—hinges on a hinge. By putting a hinge in the crane boom, the truck cab need not be cut down to allow the boom to project forward while traveling on the highway.

Anthony Marchese, head of A. Marchese Co., Milwaukee (Wis.) contractors, developed the clever scheme when he mounted a Schield Bantam crane on a converted Army halftrack. He cut the boom near the lower quarter-point, put hinges in the bottom longitudinal members, and installed eyes for pin connections at the top of the joint. For travel, the boom folds over the truck cab and rests on two steel frame supports. For operating, the regular boom hoist lines return the boom to its normal straight position where it is held by two pins.

Multiple advantages accrue from the setup: (1) Installing the hinged joint in the boom is less expensive than altering the truck cab; (2) Full cab width is retained for comforable transportation of the crew; (3) The driver's complete visibility is unimpaired; (4) The higher road clearance of the bent boom lessens the possibility of its striking other vehicles, yet the over-all height of the machine is not increased appreciably.

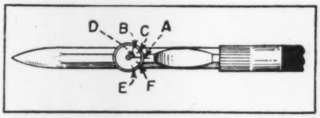


BLOW-UP—Before and after pictures demonstrate a quick repair job on 300 ft. of 66-in. steel water main at Seattle, Wash. The pipe collapsed after a break drained water from the line when a frozen air valve prevented air from entering the pipe. The Valley Construction Co., contractors, cut the ends of the line, inserted bulkheads and filled the pipe with water under 110 psi. pressure. Only real damage to pipe—which was a 5/16-in. plate—was to enamel coating.

Ice Settles the Problem

Contractor Thomas E. Dunnigan was faced with the problem of installing a 5,000-gal. oil tank in an excavation 10 ft. deep, 10 ft. wide, and 25 ft. long, beneath the sidewalk in the Post Office Arcade, Bridgeport, Conn. Location and the strength of the sidewalk would not permit the usual procedure of placing the tank with a crane. The Arcade is a shopping thoroughfare a block long and used only by pedestrians.

Mr. Dunnigan decided to build a temporary foundation of ice blocks. Fifty, each weighing 325 pounds, were obtained and the excavation was carefully filled with these ice blocks to the level of the sidewalk. From a position alongside, the heavy cylinder was rolled into position on top of the ice blocks. The ice foundation was then thoroughly doused with hot water from a hose. After several hours of the dousing, the tank reached its permanent position. Rock salt was not considered as a melting medium because of possible corrosive effect on the cylinder—L. F. Pratt, *Bridgeport, Conn.*



Calibrating a Drawing Pen

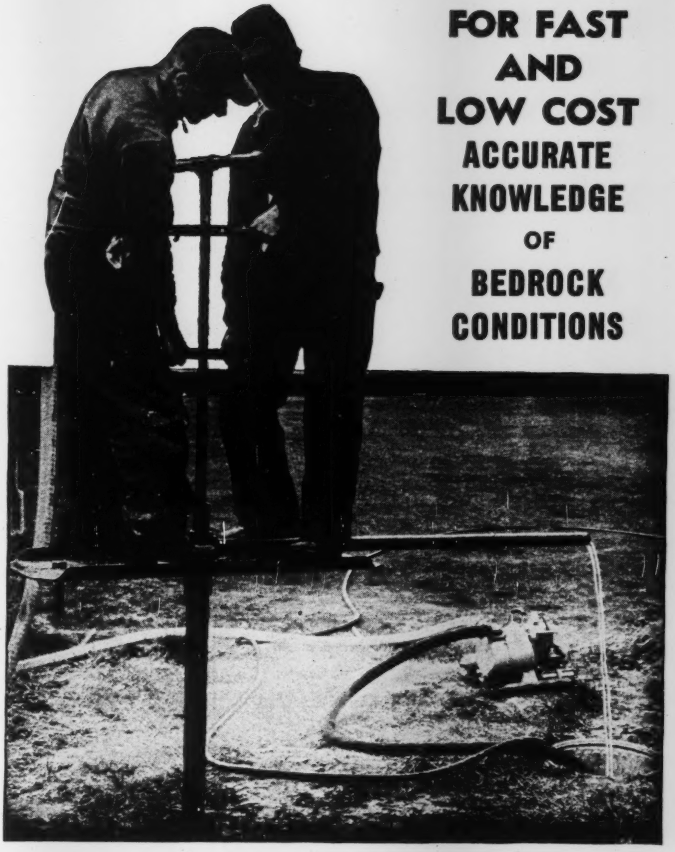
"Finding the place" on a drawing pen is simplified by scratching a mark on the leaf, as shown at A above, then scratching marks B, C, D, E, F, on the regulating nut, so that alignment of a nut mark with the leaf mark sets the pen for a certain size of line. After the pen is opened for wiping it can be adjusted back to the correct setting without time-consuming tests on scrap material.—Marsden Dempster, *Canterbury, Victoria, Australia.*

Safe Loads for Slings

Users of 4-part wire-rope slings for handling rectangular loads will find the accompanying table useful for avoiding over-stress on the slings. (Table courtesy of The Yale and Towne Mfg. Co.)

SAFE LOADS ON 4-PART SLINGS (Pounds)

Wire Rope Size (in.)	Rope inclination from horizontal		
	60 deg.	45 deg.	30 deg.
¼	2,100	1,700	1,150
⅜	4,900	3,900	2,700
½	8,500	7,000	4,700
⅝	13,000	10,500	7,200
¾	19,500	15,500	10,500
⅞	25,500	20,000	14,000
1	32,500	26,000	18,000
1¼	49,000	39,000	27,000
1½	72,000	57,000	40,000



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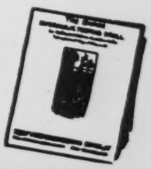

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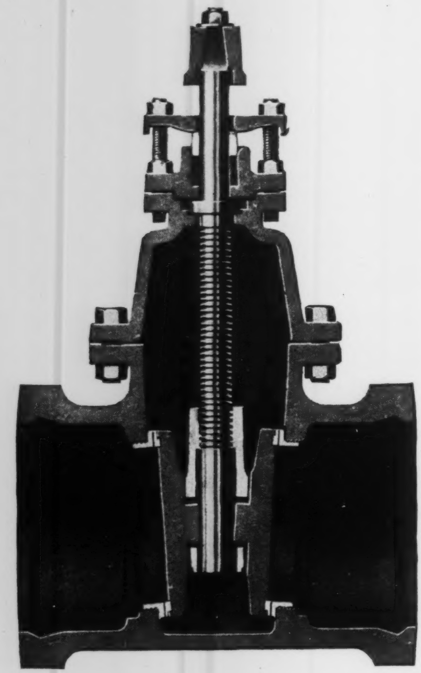

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For the safety of your community, specify R. D. Wood Gate Valves, the gate valves with the record of dependability. Send for complete information today.

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BOOK REVIEWS

A New Glossary

GLOSSARY—WATER AND SEWAGE CONTROL ENGINEERING—Clinton L. Bogert, editor, 274 pp. American Society of Civil Engineers, 33 W. 39th St., New York 18, $3 (cloth), $2 (paper).

This small but useful technical dictionary fills an important gap in sanitary engineering literature. It contains brief definitions of all terms commonly used in water and sewage engineering. The terms are arranged alphabetically under the most important noun that can be selected. Minor terms that may be thought of in the same connection are included with cross references to the definition under the primary term.

The glossary is the result of five years of work. Its preparation has been sponsored jointly by the American Health Association, American Society of Civil Engineers, American Water Works Association, and the Federation of Sewage Works Associations.

This valuable guide should find its way into the library of every consultant, designer, city engineer and plant superintendent with an interest in water and sewage engineering.

Sewage Works Accounting Manual

UNIFORM SYSTEM OF ACCOUNTS FOR SEWER UTILITIES—117 pp. mimeographed, Federation of Sewage Works Associations, 325 Illinois Bldg., Champaign, Ill., $5, supply limited.

This tentative manual of practice will fill a long existing need in the sewage works field. It adapts to sewer utilities the basic accounting system that has proved to be successful in the transportation, waterworks, and power-utility fields.

Supplemented by an introduction to the general fundamentals of accounting and by appendices demonstrating practical applications to operation cost accounting and to sewer service rate-making, the manual will be useful to sewer utility executives and superintendents as well as to municipal accountants. It will find application where sewer-revenue financing is used or to be adopted.

Water Supply Text Revised

WATER SUPPLY ENGINEERING—4th edition. By Harold E. Babbitt and James J. Doland, 637 pp., McGraw-Hill Book Co., New York City 18 and London. $6.50.

The fourth edition of this well-known text has been extensively rewritten on the basis of practical applications rather than theoretical design. It emphasizes functional rather than structural procedures and includes a number of recent developments in the field.

New data on financial problems, hydraulic machinery, electrical equipment, and water purification have been added.

Data on Municipalities

THE MUNICIPAL YEAR BOOK, 1949—International City Managers' Association, 1313 East 60 Street, Chicago 37, Ill. June, 1949. 582 pp. $10.

This is the sixteenth year of publication of the MUNICIPAL YEAR BOOK—a factual and statistical data guide on city activities and analyses of trends by population groups.

Important new features are yardsticks for measuring the effectiveness of health, recreation, police, and traffic safety activities; 1948 annexations affecting city areas; non-property taxes and 1948 revenue yields in cities over 10,000 population; and individual city data on refuse collection charges, curb loading zones in business districts, revision of zoning ordinances and off-street parking facilities.

In addition, the regular features of the Year Book have been retained and brought up to date, including units of local government, governmental and economic data, metropolitan districts, personnel data, salaries of chief municipal officials, pay rates for selected city jobs, annual municipal reports, city planning data, parking lots and parking meters, directory of city officials, analysis of court decisions affecting cities, fire and police activities, and model municipal ordinances.

Summary articles in each field of municipal activity review the significant events of the year, while articles preceding each major table analyze data reported by hundreds of cities.

All regular sections of the Year Book have been revised to contain the latest available authentic data.

New Engineering Books

MOVING HEAVEN AND EARTH—The story of R. G. LeTourneau—By D. F. Ackland. 208 pp. The Iversen-Ford Associates, 175 Fifth Avenue, New York. $2.

BUSINESS OPERATIONAL RESEARCH AND REPORTS—By John G. Glover. 299 pp. American Book Co., 88 Lexington Ave., New York. $4.

(*Continued on page 54*)

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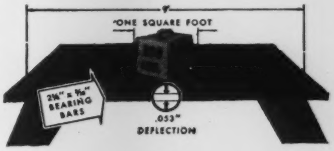

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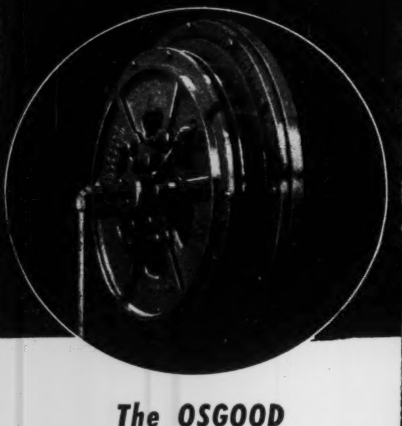

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New Engineering Books

(Continued from page 53)

Elements of Diesel Engineering—By Orville L. Adams. 367 pp. Norman W. Henley Pub. Co., 17-19 W. 45 St., New York. $5.

Glossary: Water and Sewage Control Engineering—274 pp. American Society of Civil Engineers, 33 W. 39 St., New York. $2.

Conveyors and Related Equipment—Second Edition—By W. G. Hudson. 463 pp. John Wiley & Sons, 440 Fourth Ave., New York; Chapman & Hall, London. $7.

Principles and Practice of Prestressed Concrete—By P. W. Abeles. 109 pp. Crosby Lockwood & Son, 39 Thurloe St., S. Kensington, London, S.W. 7. Price 15s.

Constructive Uses of Atomic Energy—By Leaders in Atomic Research. 258 pp. Harper & Brothers, New York. $3.

Materials of Construction—Wood, Plastics, Fabrics—By A. G. H. Dietz. 347 pp. D. Van Nostrand Co., 250 Fourth Ave., New York. $4.50.

Geology for Engineers—By J. M. Trefethen. 620 pp. D. Van Nostrand Co., 250 Fourth Ave., New York. $5.75.

Hydrology—By C. O. Wisler & E. F. Brater. 419 pp. John Wiley & Sons, 440 Fourth Ave., New York; Chapman & Hall, London. $6.

Advanced Surveying and Mapping—By G. D. Whitmore. 619 pp. International Textbook Co., Scranton, Pennsylvania. $6.50.

Our Industrial Age—By H. M. Boodish. 390 pp. McGraw-Hill Book Co., New York 18, and London. $2.60.

Barrages et Canalisation—By J. Aubert. 558 pp. Dunod, 92 Rue Bonaparte, Paris, France, 3,200 fr.

Historical Statistics of the U. S.—1789-1945—363 pp. Supt. of Documents, U. S. Govt. Printing Office, Washington 25, D. C. $2.50.

The Watts Bar Steam Plant—Technical Report No. 8—380 pp. Tennessee Valley Authority, Treasurer's Office, Knoxville, Ten. $2.25.

Accelerated Traffic Tests at Stockton Airfield—Prepared for the Corps of Engineers, Department of the Army, by O. J. Porter & Co., Consulting Engineers, Sacramento, Calif. $3.

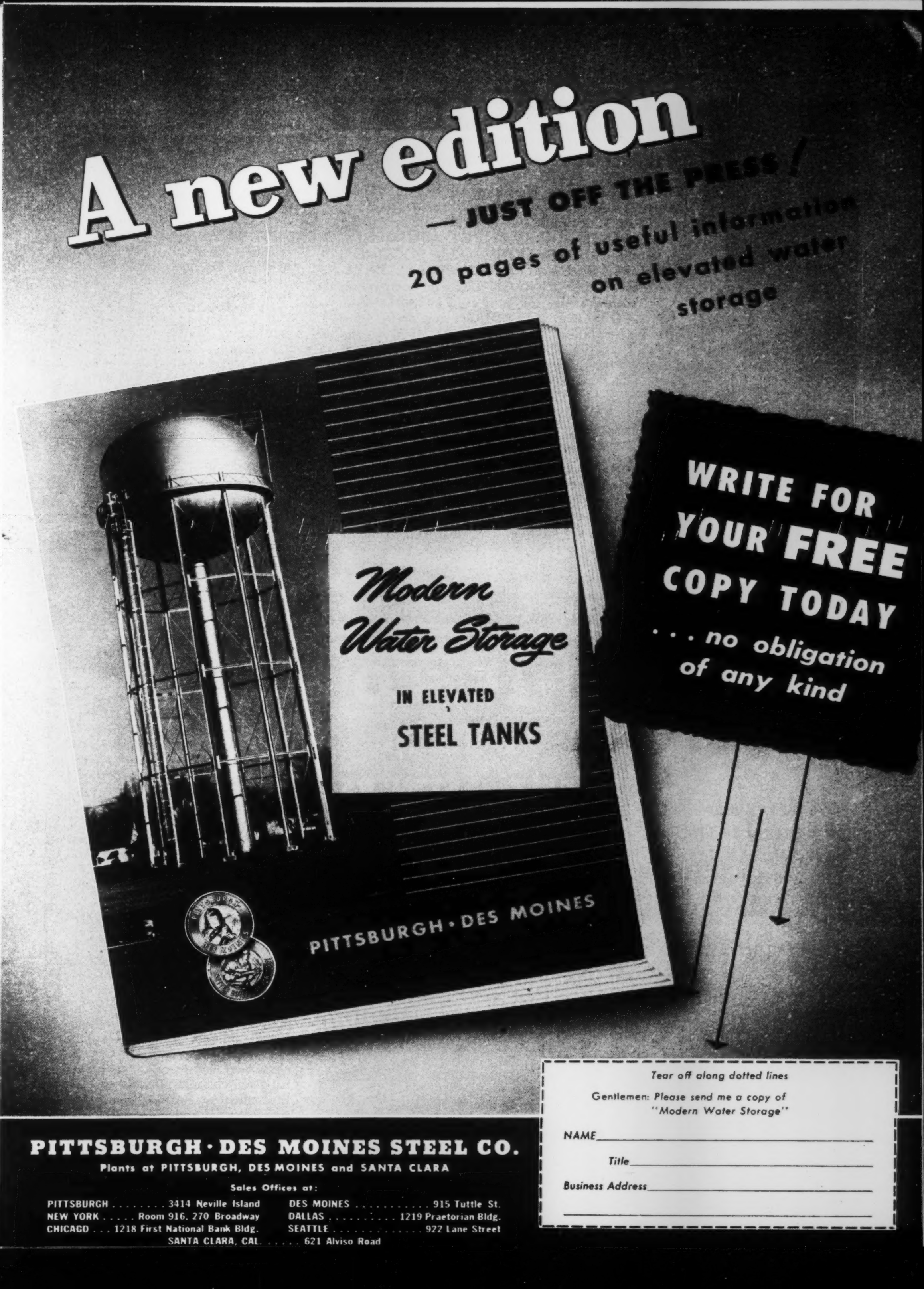
Reports and Pamphlets

Construction Survey System—Report of Practices, Recommended Procedure & Utility. Construction Surveyors Institute, 101 Park Ave., New York 17. 10c.

Proceedings of The Ohio Highway Engineering Conference — 1949 — Engineering Experiment Station Bulletin No. 136. Ohio State University, Columbus, Ohio. $2.

An Appraisal of The Membrane Method of Curing Concrete Pave-

(Continued on page 56)



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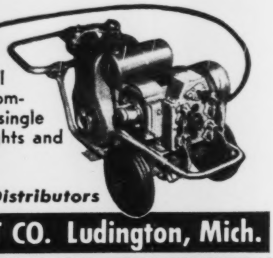

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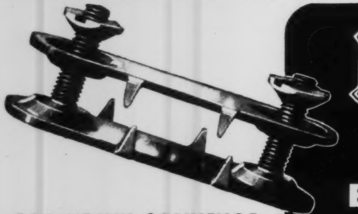

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MENTS—By C. C. Rhodes and J. R. Evans. Engineering Experiment Station Bulletin 108. Michigan Engineering Experiment Station, East Lansing, Mich. $1.

CHANNEL IMPROVEMENTS IN ALLUVIAL STREAMS—Reprinted from "Proceedings" 1948 New Zealand Institution of Engineers, by the Soil Conservation and Rivers Control Council, Wellington, C.1., New Zealand.

THE PRESERVATIVE TREATMENT OF VIRGINIA'S FENCE POSTS—Division of Planning and Economic Development, Department of Conservation and Development, Richmond, Va.

PRIVATE ENTERPRISE AND THE POINT IV PROGRAM—Recommendations of the National Foreign Trade Council, Inc., 111 Broadway, New York 6.

THE UTILIZATION OF ENGINEERING IN CONSTRUCTION—Bulletin No. 1—School of Engineering, University of Mississippi, University, Miss.

THE RAILWAYS OF GERMANY—1939-1945—British Intelligence Objective Sub-Committee Report No. 16. His Majesty's Stationery Office, London. Price 3s.

STEEL MAKING IN AMERICA—By Douglas A. Fisher. U. S. Steel Corporation, 71 Broadway, New York 6.

RADAR AND RAINFALL—State Water Survey Division, Illinois Department of Registration and Education, Urbana, Ill.

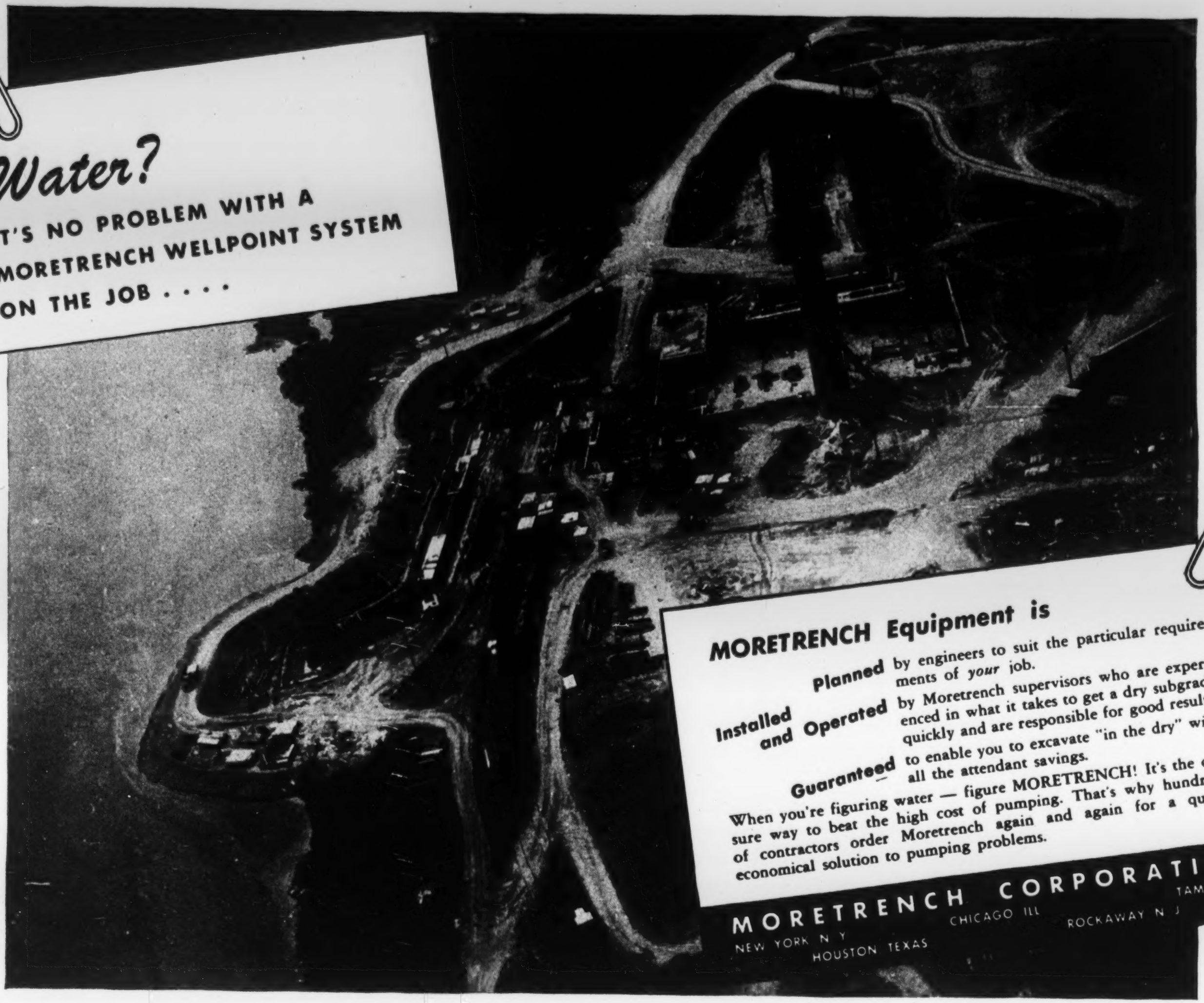
LAKE CHARLES TRAFFIC SURVEY—1947—Louisiana Department of Highways, Baton Rouge, La.

Miscellaneous Notes on Booklets and Reprints

A SERIES OF PAMPHLETS on "Cost Saving Methods" for housebuilding will be issued free of charge periodically by the Housing and Home Finance Agency, Division of Standardized Codes and Materials, Washington 25, D. C. Each will contain brief summaries of articles that have appeared in various building publications, the detailed data to be obtained by writing to the magazines concerned. No. 1, dated April, is now available.

Miscellaneous Note

PROCEEDINGS of the Institute of Housing and Planning Studies, held June, 1948, under the sponsorship of the State of New York Division of Housing (ENR June 10, 1948, vol. p. 936), have been published in a 68-page pamphlet, "Joint Action Can Cut Housing Costs". Subjects covered include new construction methods, distribution channels, building codes and their effect on building economy, economic trends and labor relations. The pamphlet can be obtained for $0.50 (postage stamps not acceptable) from the New York Division of Housing, 270 Broadway, New York 7, N. Y.



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DEVELOPMENTS ABROAD

CONTROLLING THE DARLING—Keepit Dam is now under construction on Naomi River, a tributary of the Darling River. The Darling is Australia's second longest river (1,700 miles) and periodically menaces millions of acres of land. This dam—one of 39 to be built in the watershed—will store 345,000 acre ft. (British Combine Photo)

England—So far, the largest, single industrial project in Great Britain to be financed by ECA dollars is the new plant of the Steel Company of Wales. The plant will cost about $240,000,000, and the ECA will help finance about $25,000,000 worth of U. S.-made machinery and equipment for it.

But the plant is big in lots of other ways, too. When it gets into full production in 1952, it will make about one and a quarter million long tons of crude steel a year. Last year, 14,877,000 tons of crude steel were produced by the British steel industry, and Britain is aiming at 18,000,000 tons by 1954-55. The finished products which will come out of the new steel works each week will amount to about 20,000 tons.

The 20,000 tons of finished steel products which it will turn out each week include 7,000 tons of tinplate, 7,000 tons of light-gage sheets, 3,000 tons of heavy-gage sheets, and 3,000 tons of steel-plates.

U. S.-made machinery and equipment will include a slabbing mill and a 72-in. continuous hot strip mill.

The strip mill, manufactured by the United Engineering and Foundry Company, of Pittsburgh, will be one of the largest and most modern rolling mills in the world. It will also be an example of how modern mass-production techniques are being adapted to an ancient Welsh industry.

More than 6,000 construction workers are building the new plant, which, coupled with the existing steel works, stretches along a 4½-mile strip of the South Wales coastline. Construction work poses more than the usual number of problems because it must be done without interfering with the operations of the existing plant. The new operation also calls for expansion of many existing facilities including coke ovens, blast furnaces, rail sidings, docking space, and similar facilities.

To expand the blast-furnaces capacity, for example, the job must be done in stages, to avoid any halt in the operations of the furnaces. In the present plant, there were three furnaces—one relatively large, and two smaller ones. One of these smaller furnaces has been taken down and is being rebuilt with a much larger hearth. When this is in place, the other small furnace will also be rebuilt. On completion, these blast furnaces will be as big as many in use in the United States.

Expanding the coke-oven capacity also poses a problem because a railroad embankment has to be removed. This means shifting around and rechanneling the network of more than 100 miles of railroad track which winds through the plant. At present, there are 54 coke ovens in use. In the expansion program, 90 more are to be built.

Latin America—Mexico's pre-eminence in Latin American reclamation was emphasized recently by the opening of its two biggest dam and canal projects, and preparations to let bids on a third.

With a program about double that of any of its Latin American neighbors, Mexico plans to spend about $35,000,000 on reclamation this year. This is the second largest item in Mexico's budget.

Altogether, 14 different irrigation projects are now under construction in all parts of Mexico. Twenty-two are in operation; another 21 are projected. Mexican engineers expect that one of those to come—Papaloapan River near Vera Cruz—will be Latin America's largest dam. It is to be about 230 feet high and about one mile wide, storing enough water to irrigate 200,000 to 300,000 acres. Bids have been opened, the lowest being that of Constructora Aquila S.A., for about $7,500,000. This project will extend into three states and will cost, ultimately, about $143 million, providing irrigation, flood control and electric power. Erection of bases, drainage cuts and malaria control work on this project has been under way for about two years. The river's flow of as much as 25 billion cubic meters of water yearly, drawn from seven tributaries, is expected to operate about 500,000 kw of power generating equipment in four dams.

The projects opened recently by Mexico's President Miguel Aleman were the Solis and Francisco I. Madera dams. The former, a concrete and earth-fill dam northwest of Mexico City on the Lerma River, will store 800 million cubic meters of water. The latter is in Mexico's far Northwest, near Chihuahua.

Down Under—Australia hopes to put U. S. lend-lease earth-moving equipment to a postwar use on its huge Snowy Mountain hydro-electric project.

Postwar Reconstruction Minister J. J. Dedman will visit England to buy some equipment, but he hopes he can get American equipment made available under the various aid programs. Dedman, it is reported, may visit the United States, on his way home, to buy whatever he can't find in Great Britain. Bulk of the equipment needed now is earth-moving machinery and a rock crusher for a cement plant.

Meanwhile, Australia has decided that 830,000 acre ft. of Snowy water would be diverted to the Murray

(*Continued on p. 60*)

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● Wilder Dam is a job that has *everything* — heavy rock, borrow dirt and soupy muck.

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FACTS ABOUT WILDER DAM...

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PROJECT . . . To furnish power for two 16,500 K.W. generators. Center of dam 966′ long, 70′ high . . . 50,000 yds. of concrete required . . . Excavation — 45,000 yds. of rock, 45,000 yds. of earth and 30,000 yds. of borrow fill.

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River, just over half of which will be used for irrigation. Previously, an allocation of 565,000 acre ft. had been approved for the Murrumbidgee River.

Power from the 6,800,000 kw. plant ultimately to be built will be divided between Victoria and New South Wales. The project, estimated to cost 200,000,000 pounds, will take about 25 years to complete.

Holland—Reconstruction and development of the Netherlands got about $91,000,000 in additional funds recently as a result of the operation of the Marshall Plan there.

The money came as a result of the first release of Dutch counterpart funds. It will be devoted to housing, agricultural development and reclamation of land from the Zuider Zee. (Counterpart funds are accumulated by governments receiving Marshall Plan aid in amounts equal to that paid by citizens for goods and services received under the Marshall Plan.)

Most of the money will go for housing—$70,000,000 of it—in the war-blasted areas of Limburg, Walcheren and De Betuwe, and the cities of Rotterdam, Arnhem and Mijmegen. The Dutch figure they must build 60,000 to 70,000 homes yearly for the next 10 to 15 years.

Reclaiming land from the Zuider Zee. (Counterpart funds are accepted to yield the Netherlands another 120,000 acres. Development of new agricultural resources, including reclaimed land, and improvement of farming methods will also be undertaken with the remainder.

India—The Ledo Road—Pick's Pike—can't be used any longer.

Neglected since the war's end, this highway through the hills of the Indo-Burmese border went out of service completely this summer when seasonal rains washed out several bridges and eroded sections of the roadbed. Reportedly, the Burmese government will start repairs after the Monsoon season this fall.

Hungary—Nationalization of the construction industry in Communist-controlled Hungary is now complete. All engineering concerns and contractors have surrendered their equipment to the state, and private construction is ow prohibited by law.

Engineers, superintendents, and architects who formerly ran their own businesses, have generally been absorbed in the various government divisions which handle contracting.

Hungarian engineers have been forbidden to subscribe to American engineering publications, and the government reason cited is lack of currency exchange. Engineering institutes and bureaus can still obtain American engineering literature and magazines providing state permission is granted.

England—Africa's Gold Coast will be investigated for an industrial development program based principally on power and aluminum. Sir William Halcrow and Partners, London, have been hired for the study, to begin in October.

A representative of the firm declared that it's "obvious there is a great potential power available in the waters of the Volta River valley. With bauxite mines in close proximity, there is a ready use for all the power than can be generated."

Since the Gold Coast government wants industrial development, investigators will be expected to get all the power possible without harming other desirable developments. Next fall's survey is expected to study most closely the possibilities of power at Ajena or Bui, irrigation in or near the Volta catchment, and port facilities at Ada or Accra. The study also is aimed at transport improvement through navigation; what transport would be required by an aluminum plant; recommendations as to the power which should be devoted to aluminum and what to other uses; and the effect of the development on native systems of land tenure and water rights.

Australia—The government soon will ask bids on at least 1,000 prefabricated homes—but payment in sterling must be acceptable to the successful bidder.

Specifications will be "fairly liberal," and the homes will be admitted to Australia duty-free. Australia hopes to get world-wide bidding on the contract.

Netherlands—The government recently signed an agreement under the Fulbright Act, putting into operation a program of educational exchanges with the United States. The agreement was the tenth signed under the act. Previous agreements had been made by the U. S. with China, Burma, the Philippines, Greece, New Zealand, the United Kingdom, Belgium and Luxembourg, France, and Italy.

The agreement calls for a United States Educational Foundation in the Netherlands to assist in an educational

(*Continued on p. 63*)

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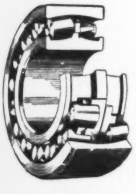
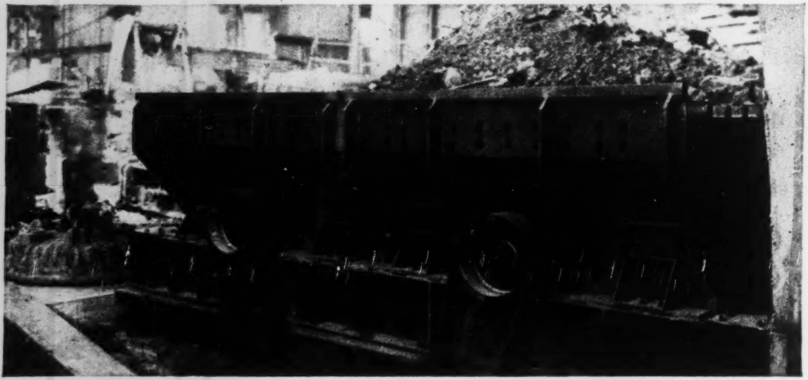
in Simplicity Gyrating Screens





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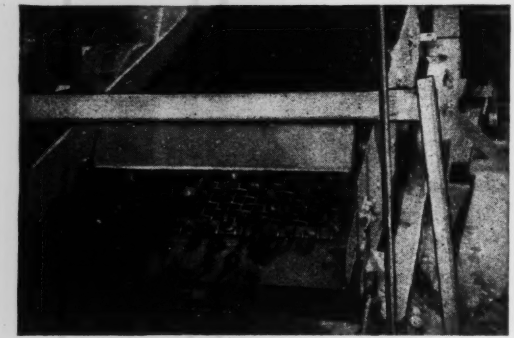

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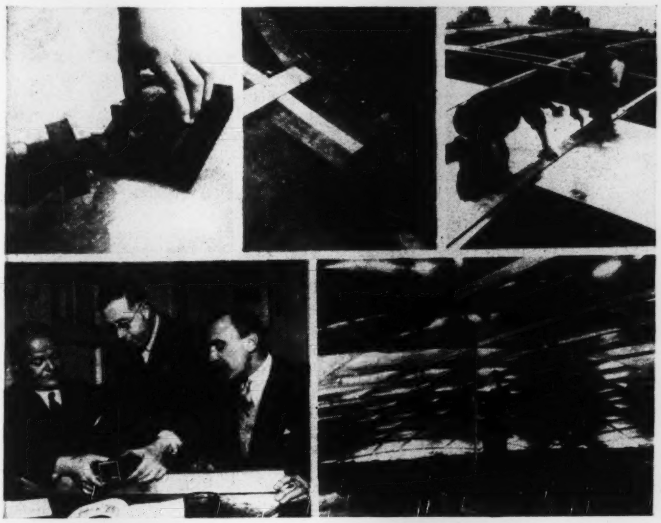

ALUMINUM ROOF FOR TANKS—A patented dome-roof, devised by Aluminum Construction Co. of London, England, has been built with an 83-ft. diameter and a 9-ft. rise. Extruded aluminum tubes, 2½ in. square and curved on a 100-ft. radius, are framed as ribs, on 5-ft. centers. Aluminum sheet covers the framing; ball and socket shoes receive rib ends. Test loads show strength reserves indicating spans up to 500 ft. are possible, according to the maker. (British Information Services Photo)

program—financed from the sale of surplus property to that country—equivalent to $250,000 a year. Among its purposes: studies, research, instruction, and other educational activities for U. S. and Netherlands citizens in schools and educational institutions of the other country.

Inquiries about opportunities for American citizens should be addressed to the Institute of International Education, 2 West 45th Street, New York 19, New York.

India—Cement factories, subways and dams are on the drawing boards or under construction in India, according to McGraw-Hill World News.

The Bombay Government has inaugurated the first stage of its $16,500,000 Ghataprabha project, in the Belgaum district. It consists of a 44-mile canal from an existing low dam near Dupdal to irrigate 125,000 acres. Second stage will be a dam 25 mi. upstream from Dupdal to provide power and irrigation water. The whole scheme will take about eight years and would bring 300,000 acres under irrigation. In addition to this project, four others have been started, to cost an estimated $45,000,000.

Work has begun on the $6,000,000 Gangapur dam, near Nasik, first of its size in India to be built entirely of earth. It will hold 7,200 million cubic feet of water when completed in 1953, and will serve two irrigation canals.

The Madras Government will set up a cement factory in the Tinnevelly district. Its capacity will be 150,000 tons yearly.

Subways modeled on those in Paris are under study for Calcutta. A soil survey, station site selection and design work are complete.

The Kashmir government has begun work on a hydro electric project at Avantipur. Its canal, by next summer, will irrigate 4,000 acres of land.

Washington—Technical assistance to Great Britain for a preliminary survey in connection with the proposed construction of a railway link between Rhodesia and East Africa has been approved by the Economic Cooperation Administration. ECA will pay the dollar costs of the survey, estimated at $40,000. Great Britain will pay the remainder. The survey will be made jointly by Overseas Consultants, Inc., a group of 11 leading U. S. engineering firms, and by Sir Alexander Gibb and Partners, London. Paul B. Coffman, an Overseas director and president of Standard Research Consultants, Inc., Bruce Wyle, railway economist, and Stewart St. Clair, geologist, of F. H. McGraw and Co., have been assigned to the project by Overseas Consultants.

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MUNICIPAL AFFAIRS

FILLED-IN MISSISSIPPI RIVER LAND has been transformed into this Class III airport at Winona, Minn.—after four years' work and expenditure of $1,000,000. It covers 650 acres and has a $60,000 administration building. Longest of three surfaced runways is 4,000 ft.

City planners and construction men in many municipalities across the nation busied themselves with airport plans last week as Civil Aeronautics Administration approval was given to completed works and requested fund allocations.

In the Southwest CAA's blessings have been given to a new 5,500 ft. northeast-southwest runway at the Phoenix Sky Harbor. This marks another step in the Arizona capital's $5,000,000 airport expansion.

The runway of hot plant-mixed asphaltic concrete, placed on an 18-in. thick gravel base, was constructed by Arizona Sand & Rock Co. at a cost of $225,000. It is 150 ft. wide.

Previously, a 6,000-ft. east-west runway had been accepted by CAA. This will be the instrument, all-weather runway, equipped with high intensity lighting.

Total cost of construction completed and contemplated at the airport is estimated at $3,949,000, exclusive of a proposed new terminal building.

Plans for a multi-million dollar airport for Shreveport, La., will move forward now that the city and the CAA have signed a contract. The city will receive $990,000 in federal aid for construction of the airport.

In the Twin Cities approval was given to a 1950 budget of $767,800 for the Minneapolis-St. Paul metropolitan airports commission. Of this amount only $148,000 must be provided by Twin Cities taxpayers; the difference will be made up in revenues from the two major and four secondary airports operated by the commission. Minneapolis will pay 64 percent of the total amount to be provided by taxes and St. Paul will contribute 36 percent.

City Council members completed negotiations with the federal government at Orlando, Fla., for construction of a proposed new $250,000 administration building at the Municipal Airport. The Civil Aeronautics Administration, acting as the federal government agency, will provide $125,000 toward the construction fund.

And at St. Louis, Mo., planners are seriously considering Parks Metropolitan Airport—just south of East St. Louis, Ill.—as the logical spot for a proposed St. Louis municipal airport on the east side of the Mississippi River. This proposed air traffic terminal would service passenger airlines.

Mayor Joseph M. Darst has made plain his feeling that the city needs a passenger airport closer to downtown St. Louis than the Lambert-St. Louis municipal airport which is in the northwestern part of St. Louis county —about an hour's drive from the city's commercial center.

A committee has been appointed to study the question of locating a municipal airport in the neighboring Illinois communities to serve downtown St. Louis.

Water-Sewer Rulings

Water and sewage works construction went on at its normal rate last week, but the news spotlight seemed to center on what the lawmakers were doing that would affect building and operation of water sewer systems.

A measure to make it easy for cities to expand municipally-owned water systems was defeated in the California legislature.

The bill was refused a recommendation by the assembly public utilities and corporations committee despite unanimous senate passage. It would have allowed communities to expand their water systems by issuing revenue bonds against the water system alone.

Under present law such systems must be financed through general obligation bonds placing a mortgage on all of the real estate in the city

The Los Angeles City Council, meanwhile, adopted a resolution directing the Board of Public Works to obtain two reports on the $3,500,000 submarine outfall sewer at Hyperion, which was completed last year by the Guy F. Atkinson Co.

The council specified that one report should be prepared by the engineering firm of Leeds, Hill & Jewett, Los Angeles, and the other by the Boston firm of Metcalf & Eddy, which conducted the original survey that resulted in the construction of the $43,000,000 treatment plant at Hyperion. Metcalf & Eddy did not, however, pass on the outfall sewer designs.

Specifications for the mile-long outfall require leakage of not more than 85 gpm. Plans and specifications were prepared by the office of City Engineer Lloyd C. Aldrich. The contractors tests indicate leakage between 900 and 1000 gpm. present. There are differences of opinion as to whether it is possible to bring leakage down to the specified figure.

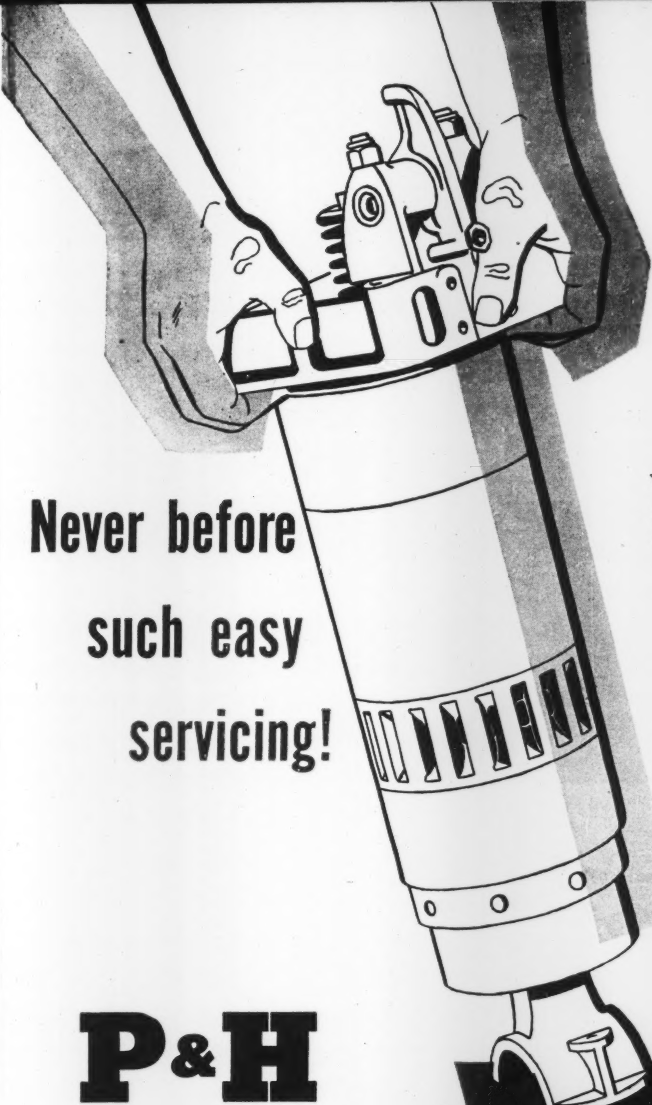
Panama City, Fla., has received a plan to finance a proposed $3,500,000 sewerage system with a 1 percent sales tax. The general sales tax would back up a revenue bond for the entire amount.

The report was presented by a citizens committee and was prepared by Smith and Gillespie, consulting engineers of Jacksonville, Leeey, Wheeler and Alderman Co., of Orlando, and the Florida State Board of Health.

In New Mexico a court decision has favored annexation of old Villa de Albuquerque to the present city of Albuquerque. And now the city has called for sale of $1,410,000 worth of bonds for water and sewer improvements for the old original settlement.

Litigation over bringing the settlement, founded in 1709, into the city limits has held up issuance of the final installment of a bond issue passed at the last city election calling for $2,900,000 for city improvements. Groups of residents in both Villa de Albuquerque and Albuquerque fought the annexation, which is a part of a general program to extend the original city limits to care for a population growth to 100,000.

(*Continued on page 67*)



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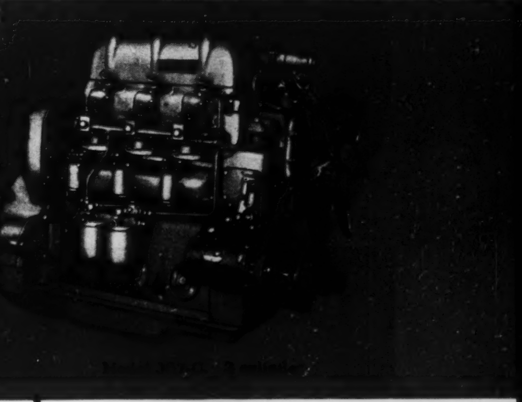
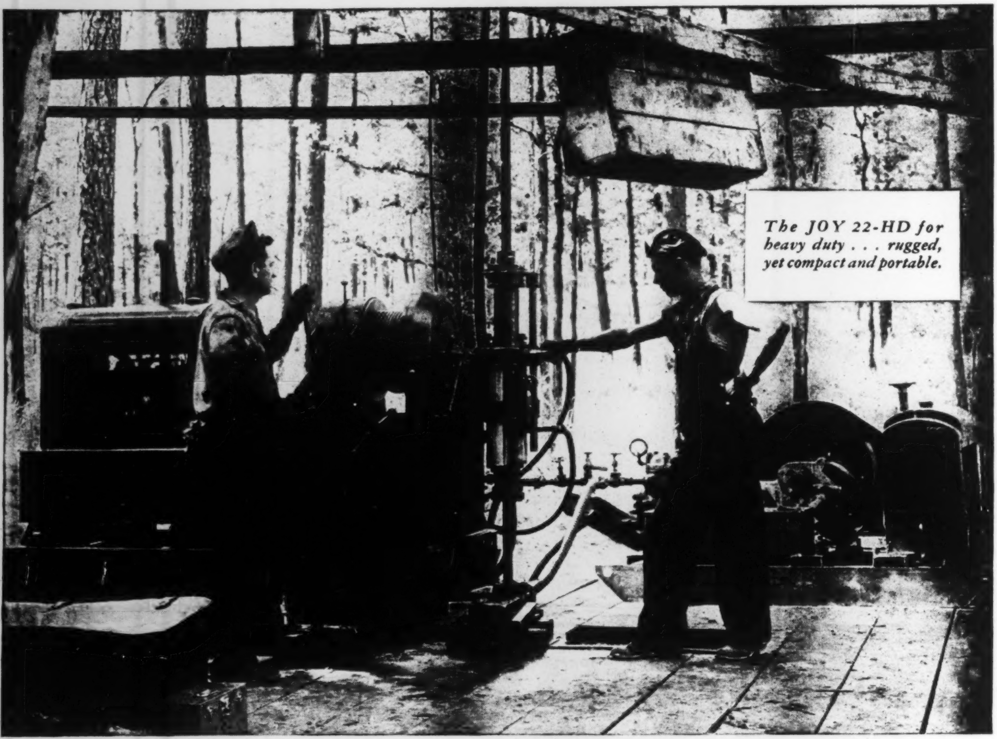


Model [illegible] 3 cylinder



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The Navy is turning a $1,400,000 sewer system at Honolulu airport over to the Honolulu government. The city will use the 20-mile U.S.N. system to extend service to adjoining residential areas that now have cesspools. The Navy built the system with pipes ranging from 6 to 24 in. in diameter when it built the airport during the war.

Recreational Facilities

Mayor Curley of Boston, Mass., signed a state act recently which authorizes an expenditure of $1,600,000 for new play areas. This concludes a long battle over restitution of recreational facilities for East Boston in return for taking Wood Island Park for airport expansion.

The land was taken three years ago and the state promised restitution in the amount of $1,000,000. Subsequently, bills were filed to boost the total to meet recreational requirements in East Boston.

The money will be used for construction of a stadium to seat 7000 persons, a swimming pool and bathing beach and appurtenant facilities.

The City of Toronto is preparing plans for development of parks and recreational facilities estimated to cost $41,000,000. The largest item is $31,000,000 to be expended on improvement of 620 acres of additional park lands. Other items include: 11 community centers at a cost of $4,-400,000; five outdoor swimming pools costing $1,100,000; and five auditoriums costing $1,500,000.

Civic Building

Plans for the block-square Police Facilities Building are now being completed in Los Angeles. Construction cost has been estimated at $9,500,000 funds to be provided by a bond issue already approved by voters.

The new structure will be five stories high and will have 559,000 sq.ft. of floor space. Features in the design is a garage of almost two acres, to accommodate and service more than 600 police cars. The building will also have a helicopter landing on its roof.

Architects are Walter Wurdeman and Welton Becket and the firm of Kaufam and Stanton. Bids will be taken late this summer.

Plans for a proposed $3,000,000 cooperative building for Akron and Summit County, Ohio, were called illegal by Akron City Law Director Roy E. Browne. He said it was illegal for the city to join with the county in paying for such a structure, but that the city could enter into a long term lease to rent part of a building if the county built it. Both the city and county jails have long since been condemned, and it was proposed to combine penal accommodations of the two governmental divisions under one roof.

Traffic and Transport

More docks are currently under construction at the Toronto harbor, and plans have been approved by Toronto City Council for future development which will allow docking of ocean liners should the St. Lawrence Seaway be completed. Largest dock just recently completed measures approximately 1560 ft. in length and costs an estimated $1,000,000. Two more dock sites are now lined up inside the Toronto harbor for future development.

Today land assessments in the Toronto harbor area are over $30,000,000, as against $2,000,000 in 1921.

In New York City the Union Motor Truck Terminal of the Port of New York Authority will be ready for occupancy Nov. 1. All applications have already been filed with the Authority by truckers interested in using this new facility.

Two underground parking garages, each two stories deep, have been proposed for Chicago by interested civic groups. The first, a 1,500-car capacity garage, would be built at a cost between three and four million dollars on Lake Shore Drive, between Pearson St. and Chicago Ave. The other would have a capacity of 639 cars and would be built at Chicago Ave. and Seneca St. at a cost of nearly two million dollars.

The North Michigan Avenue Association presented with its argument favoring construction of the two subsurface automobile garages results of traffic surveys indicating needed relief of the traffic congestion.

Another solution, being pushed actively in many cities, was the construction of parking garages to take parked vehicles off already narrow and congested structures. Probably the most ambitious program of the week was one proposed by the Pittsburgh Parking Authority, which contemplated construction of four concrete garages, capable of handling 1,947 automobiles at any one time. The Authority's announcement came shortly after the Mellon family had presented a $4,000,000 gift to the city for construction of a park and underground garage between the 40-story proposed Mellon National Bank Building and a proposed 30-story Aluminum Co. building, that would accommodate a thousand vehicles.

At Syracuse, N. Y., the city's first free municipal parking lot was opened at North Salina St. and Oswego Boulevard. It provides space for 200 cars. If demand warrants, city officials said a site adjacent to the present lot,

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MUNICIPAL BRIEFS

The Seattle, Wash., city light superintendent has asked authorization of $20,000 for an extensive aerial survey of lands in British Columbia which would be flooded by future enlargement of the city's Ross Dam on the Skagit River. The city will have to pay damages for the lands to be covered. Future construction may affect 5,000 acres, including some valuable timber land. The International Joint Commission has given permission for flooding the area.

Engineering firms engaged by the city of Elmira, N. Y., and five adjoining communities to study the area's sewage disposal problems have agreed that creation of an overall sewer authority is the best solution.

The Buffalo, N. Y., Common Council has removed the last obstacle in the way of an immediate start on the 1949-50 capital expenditure program calling for the spending of $5,000,000.

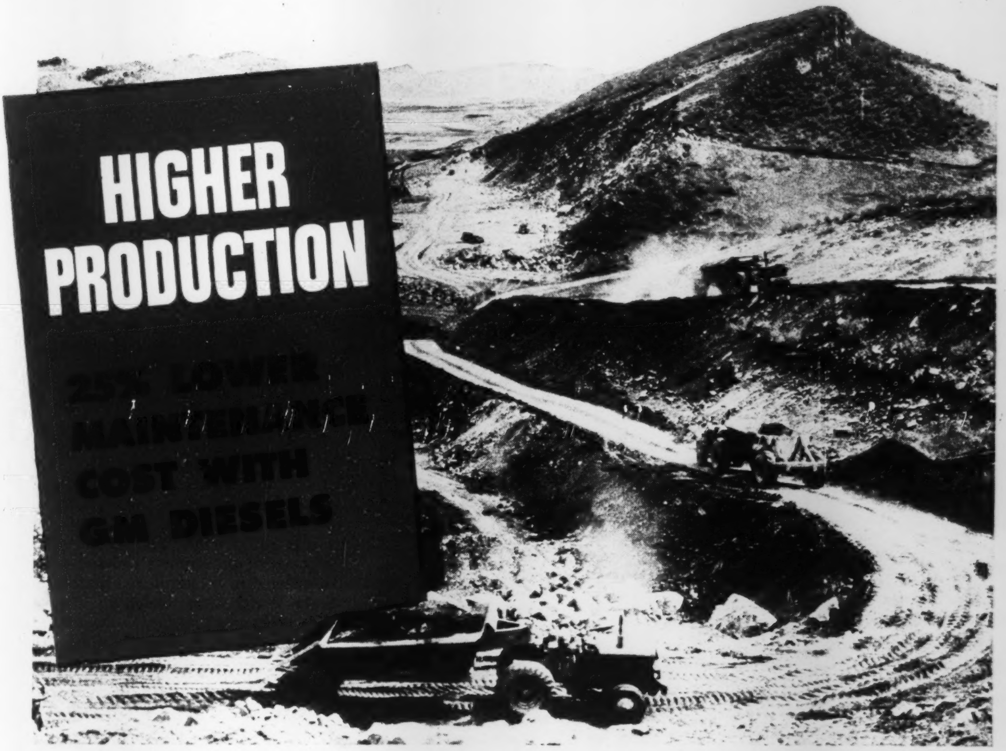
The city of Charlotte, N. C., plans to spend $1,177,000 during the next few months on improving water, sewer and recreational facilities.

Illinois and Missouri legislatures in 1949 sessions gave their approval to a five-state planning agency for the development of metropolitan St. Louis. The agency is to be organized along the lines of the port of New York Authority and will have jurisdiction in three Illinois counties plus three in Missouri.

At Niagara Falls, N. Y., the city administration disclosed that it will hire a chemical engineer to make a complete survey of industrial wastes being dumped into sanitary sewers. Crux of the problem, according to City Manager Eugene T. Creagh, is that industrial wastes said to be dumped by Niagara Falls factories are creating potentially dangerous gases.

Rust Engineering Co., Birmingham, Ala., and Pittsburgh, Pa., has a $1,041,081 contract for enlargement of the North Side sewage treatment plant at Houston, Tex. The contract includes building also a fertilizer plant to take care of the sludge from the Sims Bayou treatment plant.

First state-financed low-rent housing and slum clearance for Watertown—a $1,000,000 project—has been ap-



HIGH altitude and long haul grades are no problem with General Motors Diesels on the job. That's the profitable discovery made by Grafe-Callahan Company of Fort Collins, Colorado, on the 2½ million cubic yard Horsetooth Dam project on the East slope of the Rockies near Denver.

On the Horsetooth job (altitude 5300 feet) GM Diesel-powered Euclid trucks hauled 11½ yard (19½-ton) loads of wet gravel up 10% grades on 6-mile round trips averaging two trips per hour.

Starting with two GM 6-71 Diesel replacement engines, Grafe-Callahan purchased 8 new GM Diesel-powered Euclids and finally converted all 16 of their units to General Motors 2-cycle Diesel power.

Job manager Joe Seabury—a man whose opinion is worth noting—states, "I am being very conservative when I say that our maintenance costs have been cut 25% since we switched to GM Diesels. They stand up better and are much easier to work on. They have given us very good performance on this job."

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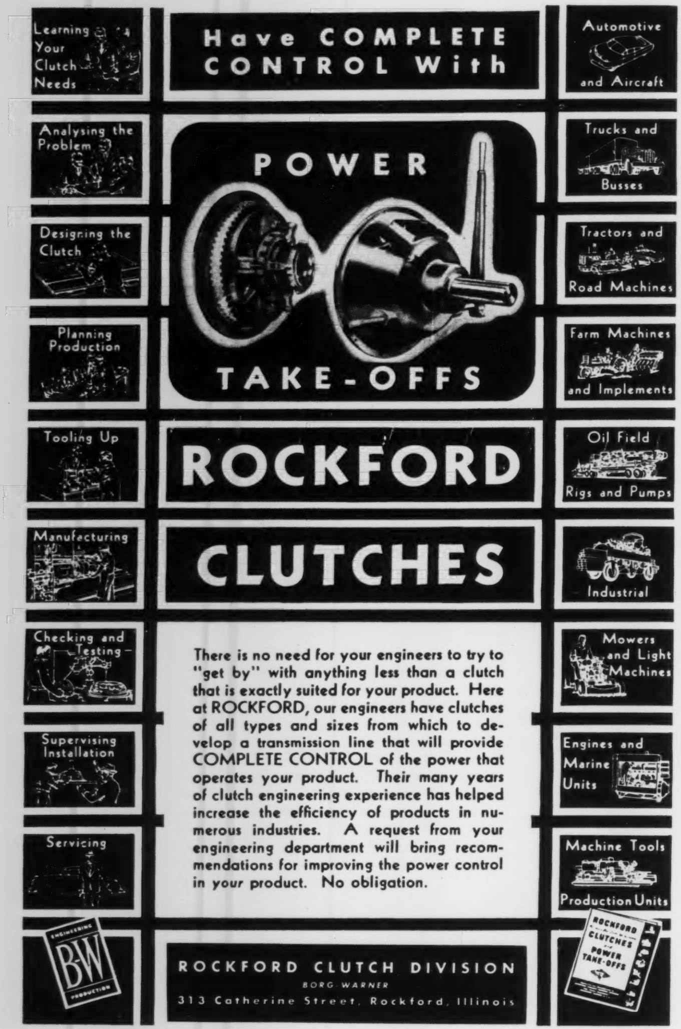

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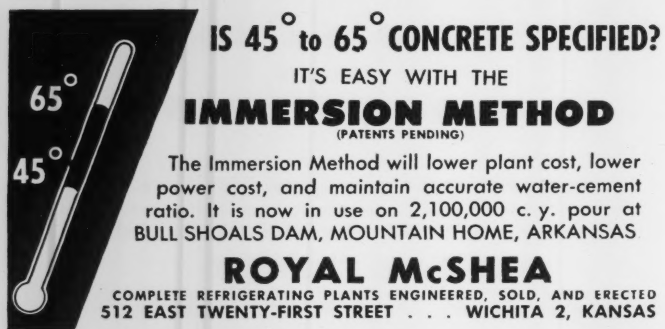

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proved by New York State's Housing Commissioner Herman T. Stichman. In making the announcement, Stichman said that many additional projects can be financed if voters approve three changes in the state's housing program this fall. These would: 1. Raise the state loan fund for such housing to $735 million; 2. increase annual state rental subsidy funds to $25,000,000; and 3. increase the amount of state-financed housing that may be constructed in any year.

◆

Sewer enabling act passed in Connecticut

The Connecticut General Assembly has passed a Municipal Sewage Enabling Act, and officials of about 50 cities and towns met late last month to hear Richard Martin, director of the Connecticut State Water Commission, explain the powers of the act. Consulting engineers, representatives of investment houses, and bond attorneys also attended.

The act gives municipalities broad powers for financing and constructing sewage disposal plants and sewers. It was passed to aid in a program during which $30,000,000 will be spent for sewerage improvements ordered or to be ordered in 40 municipalities by the State Water Commission in a statewide program to prevent pollution and keep coastal waters fit for bathing.

◆

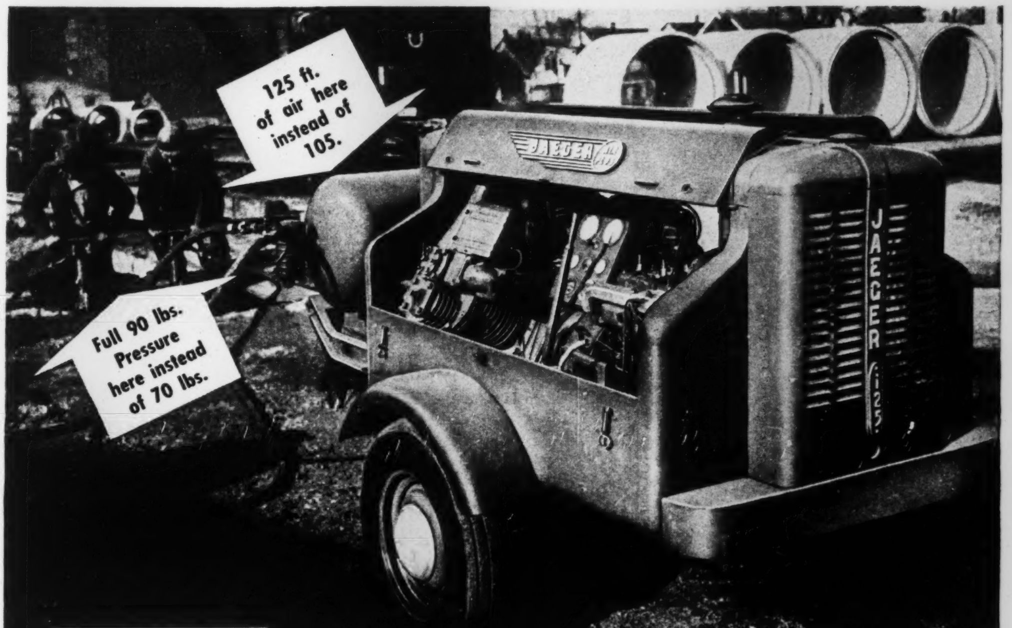
AGC adds 1,400 items to equipment cost list

Almost 1,400 items have been added to the revised edition of the Contractors' Equipment Ownership Expense Manual.

Tentative percentages have been published for each of these items, the Associated General Contractors of America, which publishes the manual, declares. Insufficient experience with the new equipment items makes these percentages tentative.

The new edition omits sample costs for equipment it lists, although earlier editions carried such costs. Instead, space is left so the user can insert behind each item the actual cost to him. AGC explained the change as due to the nature of the manual. It's a compilation of average costs to general contractors. AGC emphasized that it is not, and is not intended to be, a rental schedule.

No attempt has been made to include in the manual special equipment designed for special jobs, AGC added. Copies may be had from the Construction Foundation, 1227 Munsey Building, Washington 4, D. C.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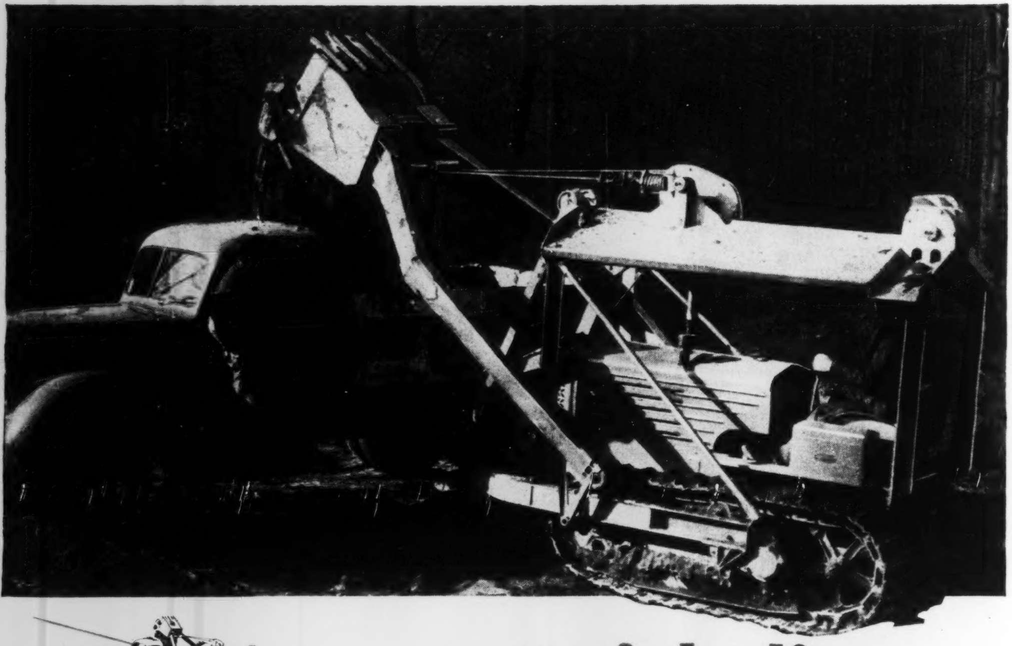

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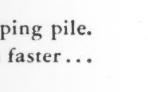

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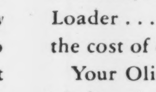


MEN AND JOBS

A. Burton Cohen, consulting engineer, New York, has been awarded the degree of Doctor of Engineering by his alma mater, Purdue University, from which he was graduated in 1905. Mr. Cohen is particularly noted for the many large and difficult concrete bridges he has designed over the last 45 years.

Col. Louis W. Prentiss, for the last two years chief of the Omaha district of the Army Engineers has been transferred to Dallas, Tex., to head the Southwestern division, which extends from the Mexican border to central Kansas, and from Louisiana to the western limits of New Mexico.

Colin F. Churchill, city manager of Roxboro, N. C., has resigned to become city manager of Oxford, N. C. He is a civil engineering graduate of North Carolina State College, and prior to going to Roxboro worked in the office of a Raleign, N. C., construction engineer, and from 1933 to 1946 was employed by the Federal Works Agency at Wilmington, N. C.

Anton E. LaBonte, engineer with the Minnesota highway department for 25 years, has been appointed assistant chief bridge engineer. There are 2600 bridge structures on the state's highway system.

James P. Dodge, of Raleigh, N. C., director of the safety division of the North Carolina Highway Commission since January, 1947, has been made administrative assistant to Commission Chairman Henry W. Jordan, filling a job which has been vacant since **W. H. Rogers, Jr.,** succeeded W. Vance Baise as chief highway engineer on February 1. Dodge has been with the commission since 1917, and served overseas in World War I. From 1919 until 1925 he was engineer on maintenance and construction in McDowell County, N. C., and from 1925 until 1940 he was chief engineer at commission headquarters in Raleigh.

During World War II Mr. Rogers was major, serving overseas and was released from active duty in December, 1947, as a lieutenant colonel.

The new Pierce County engineer at Tacoma, Wash., is **William A. Stancer,** succeeding **Finch Van Slyke,** who retired last month because of ill health. Stancer served with the Corps of Engineers for five years in the European, China-Burma-India and Asiatic-Pacific areas during the war.

Appointment of **C. A. Burn** as acting assistant state highway engineer of New Jersey has been announced following the advancement of **Edward W. Kilpatrick** to acting state highway engineer. Mr. Burn has been deputy chief of the design and construction department. He first qualified in October, 1917, to control junior engineers and rodmen on road surveys. Before his designation to the

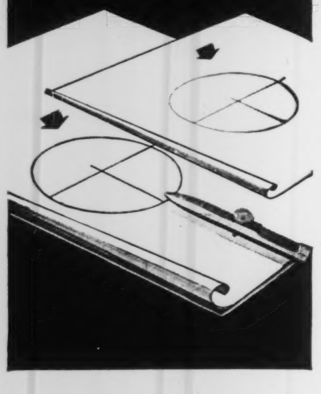
A busman's holiday recently was enjoyed by this group, all of whom live (directly or indirectly) by keeping New York Harbor navigable. The occasion was an inspection tour on board the Corps of Engineers dredge Goethals. For the New York District, Henry Hayward (l.) is chief, plant branch, Rivers and Harbor Division, J. P. Groenendyke (center) is chief, River and Harbor Division and Col. W. W. Wanamaker (r.) is district engineer. Billie Groenendyke came along for the ride, as did 150 members and guests of the New York City Post, Society of American Military Engineers. James F. Salmon, of the Arundel Corp., is president of the Post.

BATES & ROGERS
CONSTRUCTION CORP.
General
Contractors
Chicago
San Francisco

Field men of Bates & Rogers Construction Corp., contractors on dismantling and rebuilding the Third Street Bridge in Dayton, Ohio, are: M. C. Warmbier, superintendent, left, and B. E. N. Holsinger, office manager.

David Krauser, left, Western branch manager, and John W. Stang, president of the John W. Stang Corp., pose beside a Utah Construction Co. jeep during an inspection of Davis Dam, where Stang well points were used.

The du Pont Company will have $30,000,000 worth of additional experimental laboratory buildings at Wilmington, Del., when these men finish their present project. They are, left to right, Grant E. Bubb assistant field project manager, Robert K. Mason, field project manager, and L. S. Grogan, field superintendent. All are employees of du Pont.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SOLD BY LEADING STATIONERY AND DRAWING MATERIAL DEALERS EVERYWHERE

design and construction division he was the Northern division engineer in Newark for traffic relief facilities in the north Jersey metropolitan area.

H. M. Pierce, former city manager of Aberdeen, S. D., has opened a consulting engineer's office at 422 Main St., South, in Aberdeen. He will do engineering work for street, highway, waterworks, sewerage and drainage projects.

Alfred J. Otto, St. Paul, Minn., has joined the Schmuckler Construction Co. of that city as construction engineer.

Albert W. Seabright, Logan, Ohio, has been appointed Hocking County engineer in that city, succeeding the late Orla Wolfe.

City Engineer **Paul M. Zander** of Little Rock, Ark., has resigned.

After 45 years with the Ottawa, Ont., department of public works, **E. G. Goodspeed,** assistant chief engineer, has retired. His successor is **A. A. Anderson.**

R. J. Ephland, oldest member of the Montana state highway department in length of service, has retired. He joined the department in 1916 at Billings, where he previously had been employed by the Yellowstone County surveyor's office. From 1916 to 1922 he was division engineer for the highway commission, supervising county bridge and road construction. In 1922 he returned to Billings as district engineer, and he will be succeeded by **E. B. Martin,** from the state office's road plans division at Helena. In 1938-40 Martin was division engineer for the Texas and Socony Vacuum oil companies on a $42,000,000 highway-pipeline project in Colombia, and in 1940-43 he was general superintendent on a $60,000,000 Navy defense construction project in the Panama Canal Zone. Later he was construction superintendent on a highway project in Bolivia, and in 1947-48 was general manager on a highway project for the Guatemalan government.

Edward W. Kilpatrick is acting state highway engineer of New Jersey to take the place of **Charles M. Noble,** who has a six months leave to be engineer of the N. J. Turnpike Authority. Kilpatrick is an authority on both highway and general construction. He was New Jersey superintendent for Salmon Bros., in road and bridge work. In 1912, that firm was selected to build the state's first concrete road.

Earl Snyder, Jackson, Tenn., has been appointed division engineer of the Illinois Central Railroad at Champaign, Ill., succeeding the late W. B. Gillam.

Moore & Co., consulting engineers of San Bernardino, Calif., have consolidated with the general contracting concern of Louis P. Scherer, of Redlands. The new company will be known as Scherer-Moore & Co., and will specialize in general consulting engineering, industrial plant designing and general building contracting. Officers will be Scherer, president; Patrick J. Moore, executive vice-president; and G. Harold Hook, vice-president in charge of engineering, and J. Melton Johnsen general construction superintendent. The firm will have its headquarters in Redlands, sales offices in Los Angeles and Washington, and general engineering office in San Bernardino.

H. G. Buckingham, who has been acting county engineer the last year at Tulsa, Okla., has resigned to enter private engineering practice.

Ernest A. White has been appointed acting Pierce County road engineer at Tacoma, Wash., following the resignation of **Finch Van Slyke** because of ill health. He has been assistant to Mr. Van Slyke, who had been with the department for 25 years, the last three as chief engineer.

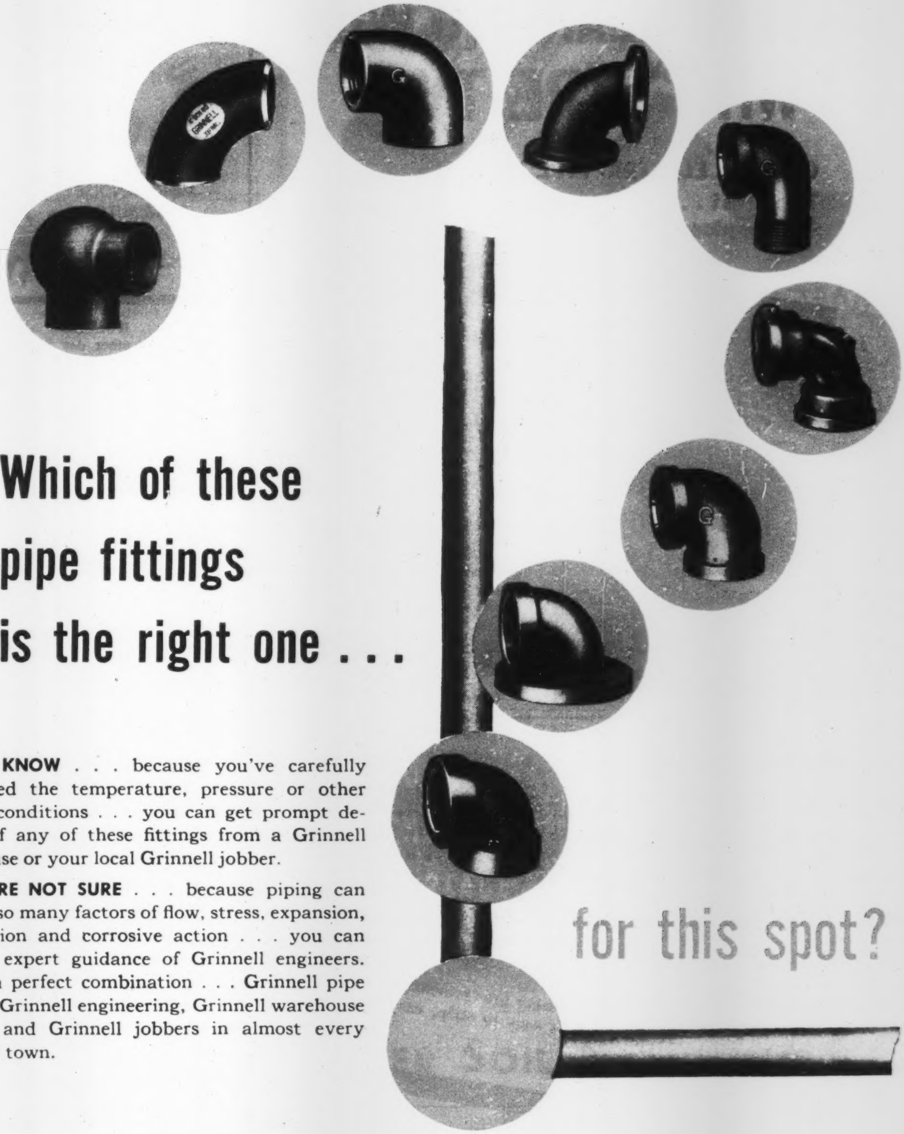
The appointment of **Robert Edward Lee** of Limestone, Me., to go to Lowell, Ore., as resident engineer of Meridian Dam on the Middle Fork of the Willamette River is announced.

Thomas G. Waring, acting resident engineer, has been reassigned as assistant to Lee.

Col. Reading Wilkinson, retired Army officer and former United States district engineer for the Charleston, S. C., district, has joined the John McCrady Co., engineers, at Charleston. He was retired two years ago after more than 30 years with the Army. Since then he has been a consulting engineer.

After a short visit to Economic Cooperation Administration Headquarters in Washington, **Norman H. Collisson** (Captain, U.S.N.R.) returned to Germany last week to become chief of the ECA Special Mission to Western Germany, with the rank of Minister. He heads the two missions to Bizone (British-U. S.) Germany and to the French Zone.

(Continued on page 77)



Which of these pipe fittings is the right one . . .

IF YOU KNOW . . . because you've carefully calculated the temperature, pressure or other service conditions . . . you can get prompt delivery of any of these fittings from a Grinnell warehouse or your local Grinnell jobber.

IF YOU'RE NOT SURE . . . because piping can involve so many factors of flow, stress, expansion, contraction and corrosive action . . . you can get the expert guidance of Grinnell engineers. That's a perfect combination . . . Grinnell pipe fittings, Grinnell engineering, Grinnell warehouse service, and Grinnell jobbers in almost every city and town.

for this spot?

99 YEARS PIPING

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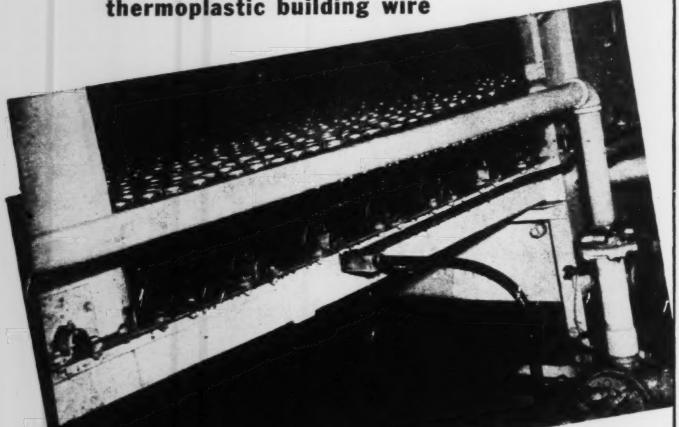
Grinnell Company, Inc., Providence, R. I. Branch warehouses: Atlanta • Buffalo • Charlotte • Chicago • Cleveland • Cranston • Fresno • Kansas City • Houston Long Beach • Los Angeles • Milwaukee • Minneapolis • New York • Oakland • Philadelphia • Sacramento • St. Louis • St. Paul • San Francisco • Seattle • Spokane

WHAT IT MEANS TO WIRE WITH TYPE TW

GENERAL ELECTRIC TYPE TW
The first . . . and foremost thermoplastic building wire



for wiring permanently wet locations

When "specs" call for a wire to be used in wet locations where moisture is likely within the raceway—underground or in concrete slabs . . . in masonry in direct contact with the earth—*the* wire to use is General Electric Type TW. This top-quality wire is underwriter-approved in sizes No. 14 to No. 0000 Awg for use in raceways in these wet locations, and in sizes No. 14 Awg to No. 2000 MCM for open wiring.

In addition to the flame- and moisture-resistant qualities of General Electric Type TW, it is also resistant to oils, acids, and alkalies.

So for those tough wiring jobs remember General Electric Type TW. It's easy to strip, easy to pull, clean to work with.

Send for free booklet

The new free booklet, *Building Wires, Cables, and Cords for every purpose* gives more detailed information on Type TW and the rest of the General Electric line. For your free copy address Section W19-632, Construction Materials Department, General Electric Company, Bridgeport 2, Conn.

GENERAL ELECTRIC

AROUND THE CIRCUIT
WITH YOUR
G-E
MERCHANDISE DISTRIBUTOR

Was asked about BX the other day by a young fella just starting in the trade. I thought everybody knew all about **General Electric BX®** **armored cable**: that it was extremely flexible and easy to handle and that it goes in to last. When I checked my handbook, I found another feature I'd overlooked. In sizes 12 and 14, it's smaller and lighter in weight than ever before, with a special bonding strip to insure adequate ground.

Did you know that **service entrance cable** (Type SE—Style U) can be installed directly on the outside of a building without conduit? You can even paint the flame-retardant, moisture-resistant cotton braid if you want to. Another nice thing about this high-quality product is that, on short spans, you can run it from the pole right through to the meter equipment.

Had a call from Bill Brown for some information on the wiring of his new livestock barn. One of the requirements was that the cable had to withstand weather extremes, and fumes and corrosive vapors. I told him the General Electric people must have had him in mind when they designed **Super PVX® nonmetallic sheathed cable.** This top-quality cable is for those difficult jobs where easy installation and long service life under the worst conditions are important. Super PVX comes in ivory or brown color to give a trim, neat appearance on surface wiring jobs. Stop by for a sample.

WIRES AND CABLES

Following service in the Navy's Bureau of Yards and Docks, he became special assistant to Interior Secretary Krug and the Coal Mine Mines Administrator.

Col. Henry Hutchins, Jr., Dallas, Tex., head of the Southwest Division, Corps of Engineers, has resigned to be succeeded by **Col. Louis W. Prentiss,** head of the Omaha district. The Southwestern Division is composed of the Little Rock, Galveston, Tulsa and Albuquerque districts.

R. P. Newland, district highway engineer at Spokane, Wash., for 10 years, has been appointed highway maintenance engineer of the Washington state highway department. He succeeds **James H. Marshall,** who became right-of-way engineer for the state land commission.

George S. Richardson, consultant engineer, of Pittsburgh, Pa., has been appointed to make an inspection of the last ten privately owned toll bridges in Pennsylvania. This is the state's first move toward buying and freeing the bridges in accordance with a new law allowing use of a $10,000,000 bond issue for that purpose.

Arthur E. Fryer, secretary of the Toledo, Ohio, chapter of the Ohio Society of Professional Engineers, has opened his own offices at 2207 Ashland Ave., Toledo, as a consulting engineer in materials handling and distribution.

Rossiter M. McCrone, engineer of the Mississippi River Commission, Vicksburg, Miss., has been presented with the Department of the Army award for exceptional civilian service, for the development of an anti-erosion asphalt blanket to be deposited on river banks. Heated asphalt and a sand mixture are dumped onto the bank through flowing water.

Some recent city managership changes in North Carolina are as follows: **E. M. Broome** is now city manager of Monroe; **Reece Snyder,** formerly city manager of Red Springs, has been appointed city manager of Marion; **S. C. MacIntire,** director of the Monroe Industrial Promotion Board, has been named city manager of Salisbury, succeeding the late H. C. Holmes; **Charles R. Storey,** who has been connected with the municipal government at Dunn, since February, 1945, has been named manager of that city; and **C. L. Lineback**, former city manager of Gainesville, Ga., has been named city manager of Statesville, N. C.

A ROGERS 'Tagalong' Trailer
AND YOUR DUMP TRUCK

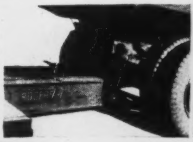
...form a PROFIT-PRODUCING TEAM

Contractors everywhere are turning to the Rogers "Tagalong" for a bigger day's work with maximum economy.

One man can do all jobs. Load and unload trailer, connect and disconnect it; drive truck and operate equipment carried.

Ideal for light and medium shovels, cranes, bulldozers, etc.

Write for complete information.



Showing cable around sheave and dump body about to be raised to engage towing tongue.

Body elevated. Tightened cable has raised drawbar and engaged towing tongue. Safety coupling pin is inserted. Trailer is ready to roll when body is lowered.

ROGERS HEAVY DUTY Gooseneck Trailers

ROGERS BROTHERS CORPORATION
DESIGNERS and BUILDERS of HEAVY DUTY TRAILERS
SINCE 1915
135 ORCHARD ST. ALBION, PENNA.
Export Office: 50 Church St., N. Y. 7, N. Y. Cable Address "Broscites"

ACCURATE
DEPENDABLE
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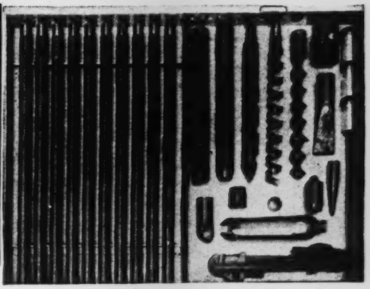

ACKER SOIL SAMPLING KIT

- Twelve soil and earth sampling tools in handy steel box.
- Can be carried in any automobile.
- Depths limited only to driving power of sledge or maul.

• Thirty years' experience has proved these tools will recover accurate samples from practically all earth materials.

• MANY USES include aluminum silicate deposits—brick and clay materials—foundation test borings—gold bearing sands—kaolin and clay for ceramics—sand and gravel pits—subgrade testing for highways and airfield runways—base materials.

ACKER DRILL COMPANY, INC.
SCRANTON 3, PA.

Down with Insurance

(A MOST AMAZING AD)

IF this ad doesn't sell you on American Mutual, then you just don't care about *money!*

Here are plain, unadorned facts that simply shout for your attention . . .

In 5 years American Mutual helped one company reduce premium rates from *13.6% above average for the field to 24.5% less than the average!*

An Alabama contractor was pleased to see his premium rates drop in 3 years from *29% above average to 7% below the average for the field.*

In 2 years we helped bring a Virginia contractor's rates down to *27.4% below the average.*

Another construction company cheered when we helped reduce their rates to actually *34% below average for the field.*

And so on and so on . . . we can show you dozens of dramatic cases where premium rates went down, down, down, thanks to our special Engineering Construction Service.

AMERICAN MUTUAL . . . **the first American liability insurance company**

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Premiums! by Mr. Friendly

This *extra* service cuts down costly accidents . . . and speeds construction at the same time . . .

And, wonder of wonders! . . . You get it at *no extra charge with every industrial policy!*

Have you ever heard of anything like it? . . .

The point is . . . if you like insurance, but don't like paying extra large premiums for it . . . why not look us up!

We'll absolutely convince you that no other liability insurance company offers as much as American Mutual!

Double-dare you to let us get you under our spell!

A M

MAIL THIS COUPON NOW—WITHOUT DELAY!

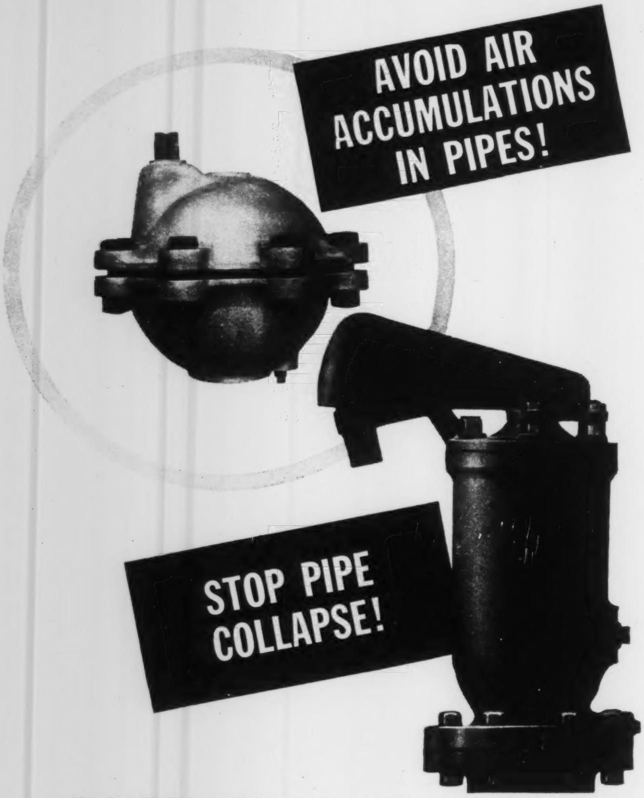
Dept. O-85, American Mutual Liability Insurance Company
142 Berkeley Street, Boston 16, Massachusetts

Without obligation, please *rush* to me more information on the All-American Plan so that I may be richer and happier!

*Name*____________________

*Street*____________________

*City*____________ *State*____________



Simplex Air Release Valves automatically vent air from the high points in pipe lines where it accumulates. This insures maximum carrying capacity at all times.

Simplex Air Inlet Valves admit air in large quantities should a line break occur and permit the expulsion of air when lines are being filled. Thus thin walled pipes are protected from collapse.

Check these advantageous features:

- Non-corrodible, non-collapsible floats cannot be distorted by any pressure effect.
- Sturdy construction permits rough handling.
- Easy bearings result in sensitivity of movement and almost frictionless action of valves.
- Properly designed valve seats least liable to stick shut or leak water.
- Few parts, and simple construction permit easy internal inspection.

For full information, write to the Simplex Valve & Meter Co., Dept. 8, 6751 Upland Street, Philadelphia 42, Pa.

SIMPLEX

VALVE AND METER COMPANY

H. M. McLaird is highway engineer of Houston County, Minn.

Robt. Gibson is engineer of Taylor County, Iowa.

Louis Zeman is highway engineer for Aitkin County, Minn.

Neil B. Faunce, a civil engineer graduate of Northeastern University, 1935, who has been doing engineering work in Marietta, Ga., has been appointed superintendent of public works at Whitman, Mass.

Lt. Col. James U. Moorehead, formerly chief of the engineer section of the Alaska General Depot at Anchorage, has been appointed head of the engineer section for the U. S. Army, Alaska. He previously had served under the chief of engineers as engineer liaison officer to Rio de Janiero and Mexico City, as district engineer at Miami, Fla., and chief of the Veterans' Hospital design branch.

James H. Carnine, president of the Engineering Metal Products Corp., has been appointed to the Indianapolis, Ind., Board of Sanitary Commissioners, succeeding the late Warren Bevington.

Geo. A. Nelson has been named city engineer at Boone, Ia.

William H. McAlpine, engineer consultant to Maj. Gen. Lewis A. Pick, Chief of Engineers, June 16 was awarded a Corps of Engineers emblem for having had the longest period of service with the Corps. Mr. McAlpine will have completed more than 47 years' service by Dec. 31, 1949. He joined the Corps at Frankfort, Ky.

Eugene A. Howard, director of the Milwaukee County, Wis., regional planning department, has been named acting county highway commissioner, succeeding **Wm. F. Cavanaugh.**

W. C. MacDonald, for the last ten years on the engineering staff at the Moncton, N. B., airport has retired to join the engineering force of the Nova Scotia public works department, as a district engineer.

Col. John R. Hardin, New Orleans district engineer for the last two and a half years, has been appointed division engineer of the Great Lakes division of the Corps of Engineers. He will be succeeded in New Orleans by Col. Charles G. Holle, returning from Panama.

★★★★ **Barber-Greene** ★★★★

PRTD. IN U. S. A. B-G COST-SAVING BULLETIN No. 4904 75M AM-6-49

DIGS 1460 FEET OF SERVICE TRENCHES IN 8 HOURS

CORAL ROCK DIGGING JOB NO PROBLEM for "RUNABOUT" DITCHER

Uleta, Fla.—The job of digging service laterals in a trailer camp near here brought tough digging conditions and a B-G Runabout Ditcher face to face recently—and the Barber-Greene won out handily for M. B. Construction Co., local contractors.

The services were 20 feet long. About 26 such cuts were required every 300 feet in addition to the main service line. The ground here is coral rock—tough digging, local contractors agree. Yet in a single 8-hour day, the fast moving, pneumatic-tired Runabout completed 1,460 feet.

The Meers Brothers, who operate this company, have come to expect such outstanding performance from their Runabout. On a previous job it cut 1,700 feet of trench in time to allow the operator to backfill and complete the entire job in 9 hours. They get added revenue, too, from their Runabout by renting it to a local telephone company on a footage basis.

CARLOAD OF "RUNABOUT" DITCHERS for MINNEAPOLIS GAS COMPANY

Performance records on a B-G Runabout Ditcher previously purchased revealed such savings that the Minneapolis Gas Company ordered a carload of Runabouts. The five new Model 705 Ditchers (see photo) were recently shipped from the factory in Aurora, Illinois, and will provide the company with six Runabouts. Public utilities keep accurate records of all operations and make detailed comparative cost studies. Preference for B-G Vertical Boom Ditchers is based on years of experience and careful analysis of operative costs.

Barber-Greene
848143

Los Angeles Cuts Cost, Speeds Up Service Installations with "Runabouts"

Los Angeles, Cal.—This city's Water and Power Department credit appreciable time and labor savings to their B-G Runabout Ditcher—so much so that they have purchased their second. Used principally for digging trench for service lines for new housing projects, the Runabouts make 60 to 70-foot passes from street to house connection in a matter of minutes. The B-G Vertical Boom is a decided asset for this class of work: it digs straight down, leaves no ramp and can dig right up to curbs, pipes and other obstructions.

◆

"RUNABOUT" CUTS THRU CORAL ROCK TO WIN TEST IN MIAMI

Miami, Fla.—The B-G Runabout put on an impressive show of digging ability in competitive tests for a prospective customer—and won the tests hands down. In "soft" coral rock it cut to a 36-inch depth at a rate of 10 feet per minute. Then, in tougher rock, it hit a rate of 20 inches per minute. **Its minimum** performance was barely equalled by other equipment tested.

DRIVES 15 MILES, DIGS 2000 FEET, BACK HOME IN LESS THAN 8 HOURS

Kenosha, Wis.—The Wisconsin Gas and Electric Company's B-G Runabout goes places fast and often. Recently, from their Kenosha shop the Runabout was driven to a job 15 miles away, dug 2000 feet of trench and drove home—all in less than eight hours.

The "Runabout" has a 15 m.p.h. road speed for fast travel from job to job.

HOUSING PROJECT PROVIDES TOUGH TEST FOR DITCHING EQUIPMENT

CALICHE, SANDSTONE TOO MUCH FOR ALL BUT B-G 44C DITCHER

Tucson, Ariz.—There is a lot of service trenching involved in an 800 unit housing project—and a lot of trouble, too, when the ground consists of 24 inches of rocks and sand over a 24 to 60-inch layer of caliche supported by solid sandstone. That's what confronted the Del Webb Construction Co., in cutting for water mains, side services, sewer and gas mains on their job here.

There are basic reasons why this severe digging test was met by the B-G 44C Ditcher where four other types of ditchers had failed. Barber-Greenes are the only Vertical Boom Ditchers. The digging buckets move straight up and the harder the material, the harder the buckets hold the boom down—there is no tendency to "climb" in tough digging. The bucket line is actually a cast steel chain—the buckets being the chain elements with bucket links and cleaner links alternately spaced. This line gives the famous B-G "milling action" that cuts through the toughest material ever to face any ditcher.

848273

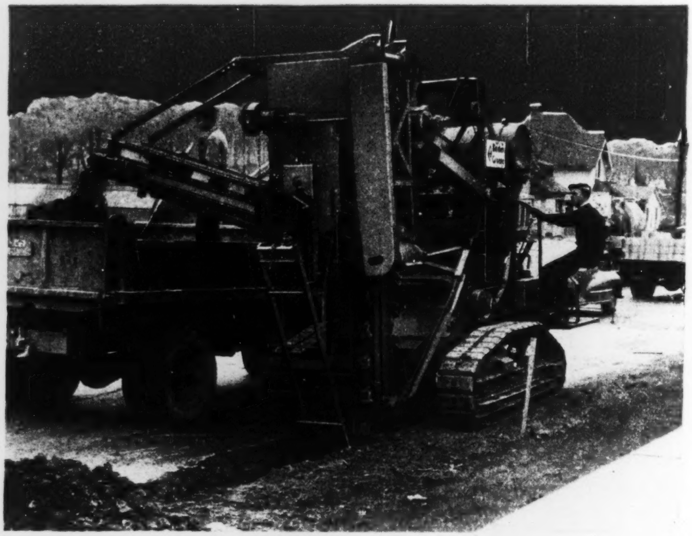
TEAM OF SIX BARBER-GREENES FOR THIS MUNICIPAL DISTRICT

Oakland, Cal.—The East Bay Municipal Utility District keeps a team of six B-G 44C Ditchers in almost steady year-round service on all types of trenching jobs. Barber-Greene Ditchers, with their Vertical Booms, dig *all* of the trench, leaving no ramp. They can dig right up to obstructions and through surfaces as tough as bituminous pavement. They therefore are ideal for a wide variety of work on municipal programs — all types of service trenching, airport drainage, cross-country lines, manholes, etc.

Barber
Greene
846422

Ditchers Uncovering "Several Hundred Thousand" Gas Pipe Joints...

San Francisco, Cal.—Repacking gas pipe joints in quantities reaching the "several hundred thousand" mark is a major project now getting under way for the Pacific Gas and Electric Co., here. The job is going on smoothly through the use of two B-G Ditchers which dig straight down to the joints—usually 3 to 3½ feet below the ground. The sizes of the gas mains vary from 4 to 30 inches in diameter, hence the use of two sizes of Barber-Greenes was indicated. One has a cut 18 inches wide, 8 feet, 3 inches deep; the other an 8-inch wide cut and 4-foot digging depth. An additional B-G Ditcher with special 12-inch boom and 7-foot digging depth has been ordered.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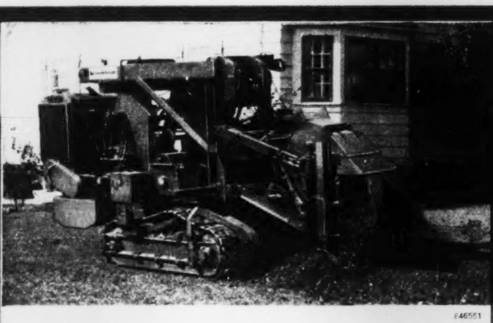
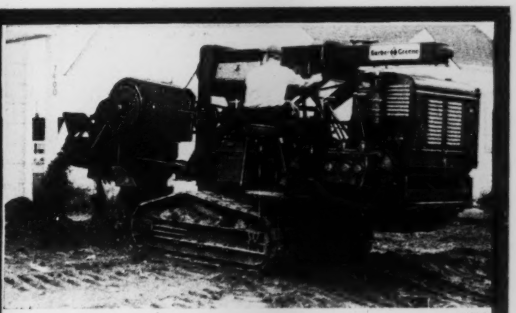
Excavated material must be immediately removed in some city work. Cutting shallow trench the B-G 44C discharges directly to truck.



846551

483,000 feet **is the two-year performance record of a B-G 710 Ditcher operated by Illinois Bell Telephone Co.**



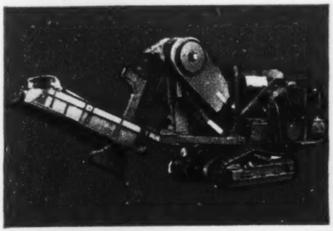
847389

Pacific Gas and Electric Co. **is using a B-G 720 Ditcher like this to help uncover "several hundred thousand" pipe joints.**

ILLINOIS BELL TELEPHONE DIGS 91 MILES OF TRENCH IN TWO YEARS with B-G DITCHER

Cross Country Work—Winter and Summer

Chicago, Ill.—An interesting report on ditcher performance from George A. Schnulle, Div. Const. Supt. of the Midwest Division of Illinois Bell Telephone Co., shows impressively the stamina and versatility of their B-G 710 Ditcher. Since its delivery in October, 1946, the Barber-Greene has dug 483,000 feet—some 91 miles, mostly tough cross-country work. Working winter and summer, often for 16 hours a day, the ditcher has encountered and operated successfully in virtually every type of material. In digging the cable trench from Joliet, Illinois, to Gary, Indiana, the most diverse variation of soil conditions became part of the day's work. The Model 710, when laying cable through towns, parkways, up and down hills, and cross-country, towed a cable reel, often weighing 4 tons.



84840

Cable laying attachment on Model 710.

MINNESOTA CITY COMPLETES 2,200 FEET OF SERVICE TRENCHES IN SINGLE DAY

Austin, Minn.—2,200 feet of gas services and mains were dug in one day, recently, for this city by its smooth-working B-G 720 Ditcher. The versatility of this Barber-Greene has made it increasingly popular as a city-owned machine, extremely valuable for service trenching, uncovering pipe, joints and conduit—even digging foundations. The City of Austin's B-G Ditcher has helped appreciably to speed up improvements throughout the community.

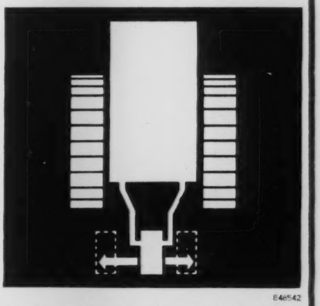
MIDWEST UTILITY CUTS 14,000 FEET WITH ONE SET OF DIGGING TEETH

Milwaukee, Wis.—A midwest public utility* was recently running tests with B-G hard-faced and standard ditching teeth on one of their B-G 720 Ditchers. They cut 14,000 lineal feet of trench with one set of hard-faced teeth. After cutting 9,000 feet, the teeth were switched from one side to the other to cut the additional 5,000 feet. Replaceable and interchangeable cutting teeth are another B-G advantage. With the exclusive B-G Automatic Overload Release which trips automatically on meeting obstructions and automatically resets itself, this advantage combines to mean more miles of low maintenance digging.

* *Name furnished on request*

Send for your copy of "B-G" City —an interesting panorama of construction activity.

MODEL 710-720 USERS REPORT ON ADVANTAGES OF THREE-POSITION BOOM



848542

"Helps a lot to dig closer to obstructions" users say about the B-G Boom which can be adjusted to three positions—center, to the right and/or to the left. It's easy to adjust, too—a one-man job."

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FOR COST-REDUCING EQUIPMENT, CALL

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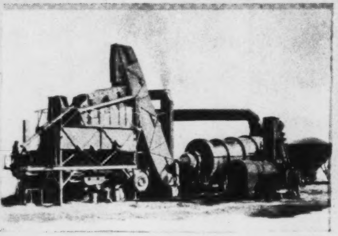
B-G BUCKET LOADERS: Capacities up to 3 t.p.m. Crawler and pneumatic-tire mounted. Some convertible to Snow Loaders.



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B-G BITUMINOUS MIXING PLANTS: Highly portable plants for producing all types of mixes — up to 120 t.p.h.

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B-G BITUMINOUS FINISHERS: Automatically place smooth level surface regardless of variations in subgrade.

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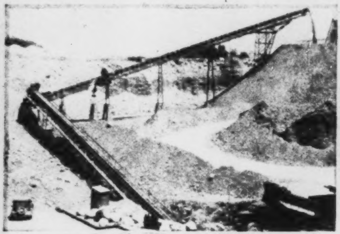
B-G PORTABLE CONVEYORS: For moving all bulk materials and packaged goods. Variety of lengths, belt widths and capacities. Electric or gasoline power.



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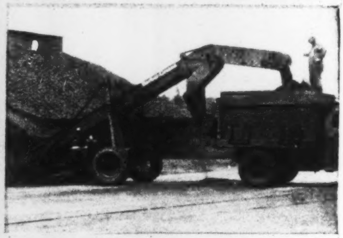
B-G PERMANENT CONVEYORS: Complete, standardized equipment including carriers, take-ups, drives, frames, etc.



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B-G COAL YARD EQUIPMENT: Full line of belt and chain-and-flight Portable Conveyors. Self-propelled, pneumatic-tired. Also, hopper car unloaders.

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Cutting costs these days is of major importance to everyone whose business involves the handling and rehandling of bulk materials. And it's a subject in which Barber-Greene representatives are well versed and widely schooled—in which their advice will prove valuable to you. If you're involved in attempting to cut costs by eliminating the use of expensive equipment and manpower, see your Barber-Greene distributor or write directly to Aurora, Illinois. You may be sure your problem will gain quick and helpful consideration.

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☐ 44C Ditcher
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The coupon will bring you complete information on any Barber-Greene machine without cost or obligation.

We will be glad to have our representative call to discuss your material handling problems with you.

We maintain a Department for the sole purpose of solving your material handling problems.

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Aurora, Illinois, U.S.A.

ALSO RECORDED

Love's Labor Lost—At St. Thomas, Ont., Alderman Geo. T. Dyer wanted a new sewer. He wanted it to run under Yarwood St., where he lives. He wanted it so badly that he campaigned several years to get it. The sewer is now being put down and Dyer has been the target of complaints from his neighbors because the street has been torn up. Now, the alderman finds, his own residence won't be served by the new sewer. He is on a different system.

Old Timber—Timber possibly used to build the old Dutch Fort Gansevoort in New Amsterdam, now New York, threatened to delay the $1,300,000 market project at Gansevoort and Washington Sts. Engineers encountered the old timber from 16 to 25 ft. below the surface while driving piles for the new Gansevoort produce market and meat center.

Old Tunnel—Excavators digging a foundation for an addition to the Woolworth store on Good Hope Road, S. E., Washington, D. C., suddenly came upon the interior of a brick tunnel which may have led from Fort Stanton, one of Washington's Civil War defenses, overlooking the Anacostia River. The tunnel had been lined with hand-made bricks.

Not the Better 'Ole—City workers of Olean, N. Y., cleaned out the wrong manhole when Olen D. Richey of 316 Coleman St. reported that his cellar had been flooded. He asked the city to pay his $24 plumbing bill. The main sewer in the street backed up and filthy water covered the cellar floor. City workers parked their truck not at 316 but at 306 Coleman St., and cleaned out the manhole at that location. When there was no relief, Mr. Richey called the plumbers.

Heating Troubles—Because a firm of plumbers in Louisville, Ky., turned the heat on a former employee recently, 12 new house owners on Cliff Avenue may have a chilly spring. On complaint of the plumbing company that 16 gas furnaces worth $2,240 were stolen during the winter from its warehouse, police arrested the former employee and charged him with the theft. The alleged culprit denied theft, but admitted he had installed 13 of the heating units in question—12 of them for a contractor building new houses in the subdivision.

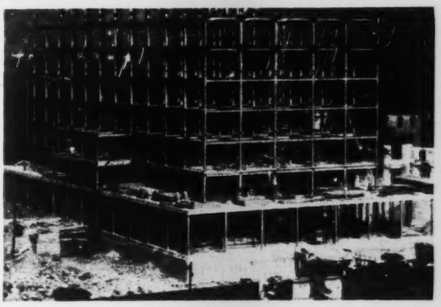
Petrified Office—W. G. Brown's lumber office in Lamar, Colo., probably is made of the rarest of all woods and is completely fireproof. The material is petrified wood, so the building is older than any other in Colorado.

utility shed or office building...

a single source of steel for both!

Above: the International all-purpose utility building, ideal as a tool shed, machine shop, storage shed or garage.

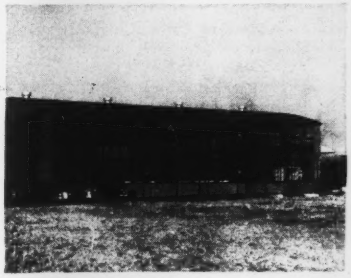
At Right: this 14-story office building used 1,624 tons of International steel. Welded construction throughout.



From a steel utility shed to an office building . . . your most diversified single source of structural steel is International.

International can give you a rugged all-steel building for use as a warehouse, storage or general utility . . . easily erected . . . easily moved with 100 percent salvage; or structural steel and miscellaneous iron for your general building jobs large or small.

International's single source responsibility assures you of on-time deliveries, cuts your costs and enables you to "button up" your jobs on schedule. Send a rough sketch or plans and specs for your building problem. We'll be glad to submit recommendations and quotations . . . at no cost to you.



Another typical International job was this refrigerator warehouse.

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ENGINEERING SCHOOLS

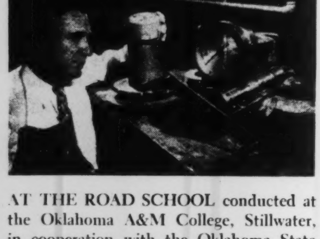
Educational Notes

Construction of the west unit of a new engineering building at the University of Wisconsin is well under way. It is the first classroom building to be constructed at the university with state funds since 1931. When more funds are available, a second unit will be built which will house the civil engineering and drawing departments.

The N. Y. State Department of Public Works has employed four student engineers from India who are doing graduate engineering work at the University of Utah under subsidy by their government. For the summer months, they will work in the department's district offices where they can study the most modern methods of highway and bridge construction.

A graduate program in highway engineering to begin in September has been announced by the department of engineering at the University of Virginia. It will lead to the degree of Master of Engineering. Tilton E. Shelburne will direct the research work. The new course is established through the cooperation of the Virginia Council of Highway Investigation and Research formed under joint sponsorship of the university and the Virginia department of highways.

Miss Ethel Love was the only woman in the senior class of 2,332 at the Case Institute of Technology. She is the last, also, as beginning in the fall the institute will revert to its prewar policy of not admitting women students.



AT THE ROAD SCHOOL conducted at the Oklahoma A&M College, Stillwater, in cooperation with the Oklahoma State Highway Department, W. C. McClain, instrument man in the district engineer's office, Buffalo, Okla., prepares a test for an asphalt paving sample to determine its stability, or the psi it will withstand under road conditions. The school under the direction of G. H. Bittle, assistant chief engineer of the department, has just finished the first year of a series of refresher short courses.

Faculty News

Rolf Eliassen has been appointed professor of sanitary engineering in the department of civil engineering at the Massachusetts Institute of Technology. He will also supervise a research program in the analysis, purification, and disposal of industrial wastes, and studies in water supply contamination and purification. He is an M.I.T. graduate, 1932. He served with consulting engineering firms before going to the Illinois Institute of Technology as assistant professor of sanitary engineering in 1939. Later he was associate professor of sanitary engineering and director of the sanitary research laboratory of New York University, where he became a full professor in 1946. During the war, he was in charge of the sanitary engineering division of the Second Service Command. He became a lieutenant colonel in the Corps of Engineers.

Prof. Heber Dunham, of the N. Y. University college of engineering, has retired as professor emeritus. He has been professor of engineering, drawing and descriptive geometry since 1930. He first joined the faculty in 1909 as an instructor.

Prof. Mario C. Giannini has been appointed assistant dean in charge of the day division. During the war, he was director of the university's engineering, science and management war training program.

Dean S. S. Steinberg, of the University of Maryland college of engineering, is chairman of the U. S. engineering delegation of 40 who are attending the first Pan American Engineering Congress in Rio de Janeiro this month. A Pan American Union of engineering societies is to be formed.

Dwight L. Glasscock has been appointed assistant professor of hydraulic engineering at Louisiana State University. He received his B.S. in civil engineering from the University of Illinois in 1944 and his M.S. from the same instiution in 1947. Since September, 1947, he has been employed by the Aluminum Company of America on the design of various hydro-electric developments.

Prof. H. E. Griset

Henry Edwin Griset, associate professor of civil engineering at North Carolina State College, has been appointed head of a new curriculum in construction at the college's school of engineering. The course will cover a 4-year period, leading to the Bachelor of Science degree in construction. Made possible by the cooperation of the Associated General Contractors of America, the curriculum will prepare students for highway, bridge, waterway and sewerage construction. Professor Griset took his B.S. in civil engineering at New York University in 1935 and his master's at the Brooklyn Polytechnic Institute in 1945. He taught at Brooklyn Poly, C. C. N. Y, and at Cornell, where he was assistant professor of structural engineering. He has also had extensive industrial engineering experience.

Prof. William Remington Bryans, retiring assistant dean of New York University's college of engineering, received the honorary degree of Doctor of Engineering at the 117th Commencement of the university.

Retiring Sept. 1 from the faculty of the college of engineering, University of Illinois will be Dean Melvin L. Enger; Wilbur M. Wilson, research professor of structural engineering; and Francis M. Porter, professor of general engineering drawing.

Mrs. Mary F. Blake is assistant professor of engineering drawing at the school of engineering, Cooper Union, New York. She is the first and only woman faculty member in the 87 years history of the institution.

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JOBS that call for a permanent pile foundation call for Raymond equipment, Raymond experience and Raymond skill. From preliminary soil investigation to completed foundation, you can be sure that the Raymond organization will work swiftly, accurately and at minimum cost.

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Pictured above is Raymond's 1300-pile foundation for the new Caterpillar Tractor Company Building LL at Peoria, Ill.

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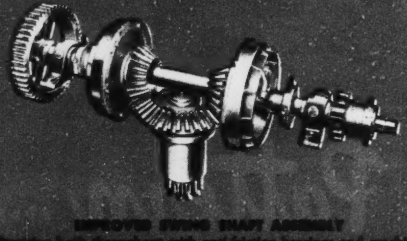

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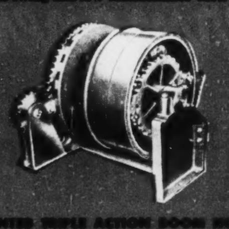
Precision built throughout with anti-friction bearings and machine cut steel gears. Swing shaft rolls on Timken tapered roller bearings. Gears are mounted on pre-lubricated, sealed-for-life ball bearings. Bevel pinions are flame hardened for maximum life. New design incorporates heavy-duty smooth operating internal expanding clutches. Exceptionally fast swing and low maintenance costs are the result.



PATENTED TRIPLE ACTION BOOM HOIST

Power controlled lowering as well as raising gives smooth performance on all precision work. Jaw clutch can be disengaged and boom lowered on brake when fast operation is desired. Two self-energizing brakes control power application for raising or lowering boom. Ratchet and pawl provided for safe operation.

The BANTAM mounts on any 1½ ton truck chassis or larger. Drives up to the job and digs in. Finishes one job at a profit-making pace and speeds on to the next without losing time. It's a money-maker in tight quarters . . . a fast worker in digging water and sewage systems, drainage ditches, basements, and handling sand, gravel, and other construction materials. Interchangeable booms and buckets make the BANTAM 7 machines in one. It is quickly converted *on the job* for a wide variety of operations.

As a shovel or dragline the BANTAM will load to 60 yards per hour under normal conditions. When used as a trench hoe it will dig 100 feet of five foot ditch per hour. Crane capacity—five tons. Its profit-making ability teams up with mobility, economy and soundness of design to make the BANTAM a money-maker for any contractor.

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OBITUARY

Charles G. Connors, 65, president and manager of Kyle & Co., steel fabrication firm of Fresno, Calif., died July 16. He was a member of the Fresno Builders Exchange and the Engineers Club.

Eldred G. Garrigan, 53, civil engineer staff member of the California state department of highways, died July 16 in Sacramento. A Navy veteran of World War I, he was with the highway department 23 years.

Parker Raymond Lange, 56, assistant superintendent of construction for the East Bay Utility District, Oakland, Calif., died of a hear ailment in Berkeley. A native of New York and a graduate of Cornell University, he had been with the utility district since 1923.

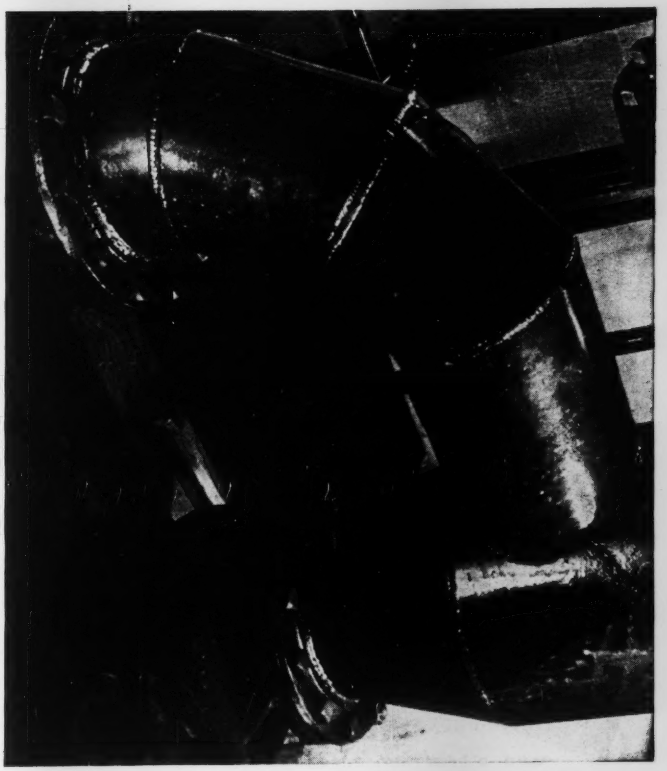
Frank C. Cuffe, 48, San Francisco construction and mining engineer, died recently after a six months' illness. A graduate engineer of the University of California and president of River Pines Mining Co., Plymouth, Calif., which is engaged in river dredging, Mr. Cuffe was in road construction for 20 years. Among his bigger jobs was the scenic route between Palm Springs and Idylwild, and the Bolinas Road between Woodacre and Point Reyes, Marin County.

Fred W. Lepper, 82, assistant supervising architect of the Treasury Department and who had participated in the construction of several Federal buildings in Washington, D. C., died July 15 in Richmond, Va. Mr. Lepper supervised construction of the Bureau of Engraving and Printing and the old Interior Building.

Arturo A. Tomelden, 49, civil engineer and Patent Office attorney, a native of the Philippine Islands, died July 17 in Washington, D. C. He had joined the Patent Office in 1926 and was an examiner at the time of his death. He was a civil engineering graduate from Catholic University.

Col. J. Frank Barber, 69, ranking officer in the 304th Engineers of the 79th Division in World War I, died July 18 at the Philadelphia Naval Hospital, Pa. Col. Barber was a civil engineer with offices in Philadelphia and was active in organizing the 79th Division Association.

Guy Albert Marsh, 55, died July 21 in Dayton, O., where he had been city



How Many Joints In An Elbow?

Two with ordinary pipe, but only one if you are using ARMCO Welded Steel Pipe. The ARMCO method of "tailoring" pipe and fittings to the job saves you time and money on plant piping.

With ARMCO Pipe you eliminate at least one pair of flanges at every bend. Standard or prefabricated special fittings—tees, wyes, elbows, reducers—come welded to straight pipe runs. This saves hours of tedious assembly, means less labor and material costs. Savings up to 25 or 30 per cent are not unusual and maintenance is bound to be small. Fewer flanges mean less chance for leaks and there are no threads to invite corrosion.

ARMCO Welded Steel Pipe will meet your every requirement. Diameters range from 6 to 36 inches; wall thicknesses from 9/64- to 1/2-inch. Uniform lengths run up to 50 feet. Use ARMCO Pipe with confidence for plant piping, water supply mains and similar requirements. Armco Drainage & Metal Products, Inc., Welded Pipe Sales Division, 1345 Curtis Street, Middletown, Ohio. *Export: The Armco International Corporation.*

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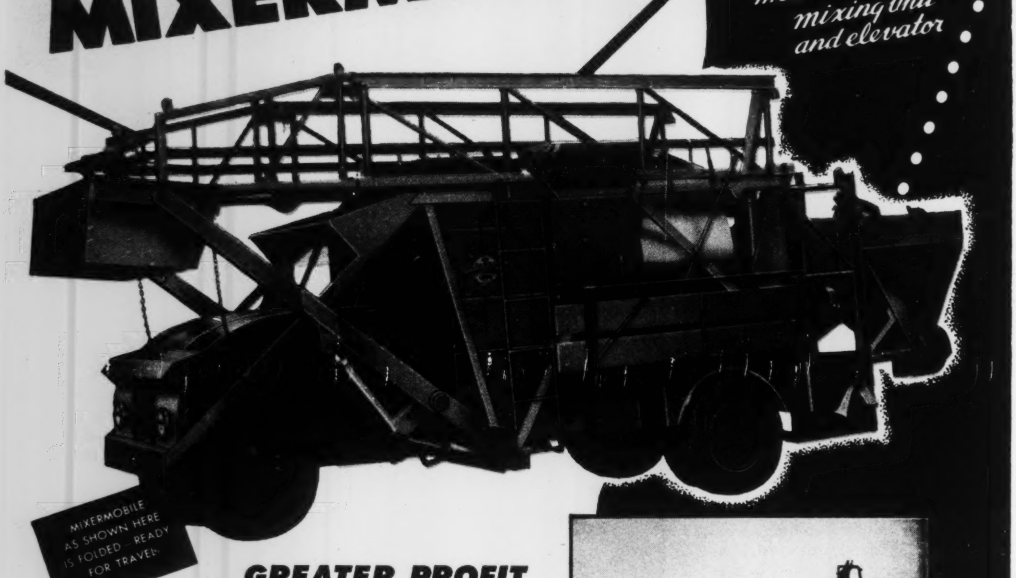

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The new one-yard Mixermobile Model M-6 built to fit all jobs, both small and large. Its complete mobility means more jobs covered every day.

SAVES money by using dump trucks—mixes concrete on the job.
SAVES cost of erecting tower—35-ft. tower attached.
SAVES cost of hoist and storage hopper—included with tower.
SAVES time—drive to the job, ready to mix in five minutes. When pouring is finished drive to next job.
Turns out 200 cubic yards of concrete per day.

Use MIXERMOBILE — the most economical method of handling concrete on the job. Cuts labor costs—no time wasted waiting for concrete. One man operates complete unit.

FEATURES: HYDRAULIC CONTROLS.
MIXER COMPLETELY ENCLOSED—controlled by specially designed shaft (gears enclosed on outside, no contact with cement.)
POWERED BY V-8 FORD ENGINE.
DISCHARGE TIMER
FOOL-PROOF WATER CONTROL SYSTEM.
WEIGHT— 20,000 lbs.
Will pass all highway limitations.

WRITE TODAY FOR LITERATURE AND YOUR NEAREST DEALER

- 35-FT. TOWER lifts concrete in hoist bucket and empties into tower hopper. Eliminates cost of cranes and moving to and from the job. Extension may be had by special order.
- HYDRAULIC CONTROLLED SKIP holds 1 cu. yd. Loaded directly from dump trucks.

MIXERMOBILE MANUFACTURERS

WAGNERMOBILE

6855 N. E. HALSEY STREET, PORTLAND 16, OREGON engineer the last five years. He was a lieutenant in the Engineer Corps in World War I.

James A. Kelley, 81, retired civil engineer, died July 23 at Washington. Born in Syracuse, N. Y., he was a graduate of Onondaga Academy in 1888 and began his career as municipal engineer, New York City, 1890-1897, then became resident engineer in charge of construction on the Chicago, Milwaukee & St. Paul Ry., 1897-1900. In succeeding years he served with various railway firms in the East and Mid-West. During World War I Mr. Kelley was commissioned a Major in the construction division, U. S. Army and returned to Washington in 1924 with the construction engineering department of the District of Columbia until 1936. He then served as inspector of construction in the engineering department until his retirement in 1939. He was a life member of the American Society of Civil Engineers.

David John Roberts, 38, Columbus, O., an engineering aide for the Ohio Highway Department for 17 years, died July 17.

Ollie F. Palmer, 60, tax map draftsman for Lorain County at Elyria, O., for many years, died July 13 in Cleveland. He was a member of the Ohio State Society of Professional Engineers.

Elections and Activities

Arthur E. Focke, research metallurgist for the Diamond Chain Co., Indianapolis, Ind., is to be the next president of American Society for Metals. According to an announcement by the society's executive secretary, Mr. Focke will take office on Oct. 19 at the annual ASM meeting in Cleveland, Ohio. Walter E. Jominy, staff engineer of the Chrysler Corp., will fill Mr. Focke's present position as vice-president of the society.

George H. Delano, vice-president of the Massachusetts Highway Association and chief project engineer of the Massachusetts Department of Public Works, has been named chairman of the New England Highway Exposition to be held at the Commonwealth Armory at Boston in September.

L. H. Wilson of Greensboro, N. C., has been elected chairman of the fifth

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The reason is simple: The higher physical properties of these high strength steels make it possible for you to use thinner sections to produce units that weigh one-fourth less; that are substantially stronger and more durable; that require one-fourth less steel per unit. So, in many cases, you can produce as much as one-third more units from every ton of steel used. And, since both U·S·S COR-TEN and U·S·S MAN-TEN, like plain carbon steel, can be readily fabricated—since one-fourth less steel is required per unit, with consequent reduction in shipping costs — since fixed charges can be spread over one-third more units, your finished product can be built at little or no increase in cost.

Our warehouses and sales offices, coast-to-coast, have U·S·S COR-TEN and U·S·S MAN-TEN steels in stock. Our other High Strength Steels—U·S·S ABRASION RESISTING and U·S·S MANGANESE-NICKEL-COPPER — are also stocked for your needs. Fill in and mail the coupon *NOW* for free booklets on U·S·S High Strength Steels.

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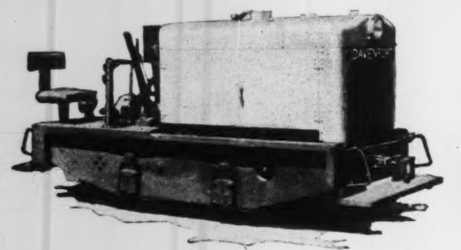

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For best results, select a locomotive of size, type and accessories that FIT your particular operating conditions. The locomotive shown above is one of five, 6-ton, Davenport Diesel Mechanical Locomotives purchased by Cia. Constructora "El Aquila", S. A. They are suited to service in tunnels, pits and mines. Because of limited head room, the cab was omitted. To protect against gas explosions or tainted air, these locomotives are equipped with Flame Arrestors and Exhaust Dilutors. We Can BUILD to FIT *YOUR* NEEDS.

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division of the North Carolina State Highway Employees Association, succeeding K. R. Scott of Guilford County. The division includes Person, Granville, Orange, Guilford, Caswell, Durham, Alamance and Rockingham counties.

E. L. Lium of Grand Forks, N. D., has been elected chairman of the State Board of Registration of Professional Engineers.

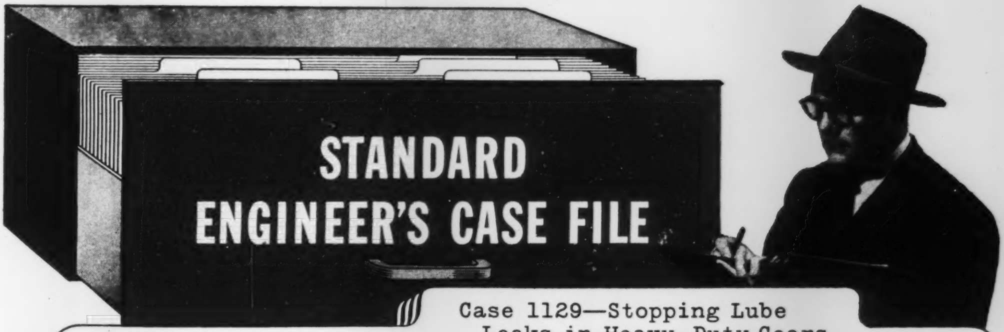
The Mississippi Society of Professional Engineers has approved a bill revising the present engineering license law. The new bill will be presented to the legislature next January. The chief feature of the proposed law changes the experience required for an engineer's license from one year to three years. This will bring Mississippi in line with the laws of other states for better reciprocal relations.

John W. Cunningham of the Portland engineering firm of John W. Cunningham & Associates has been elected president of the Oregon State Board of Engineering Examiners. L. E. Kurtichanof, Portland, was elected vice-president. Other members are Charles B. Carpenter, S. C. Schwartz and Bertram C. Dick, all of Portland.

"One third of the state's highways are absolutely worn out and inadequate for present-day traffic," Paul Smith, field representative of the New York Good Roads Association, told town highway superintendents at a meeting in Jamestown, N. Y. Mr. Smith keynoted a drive to organize a chapter of the association in Chautauqua County. He declared that the approximately 14,200 miles of state highways are being worn out faster than they are being replaced.

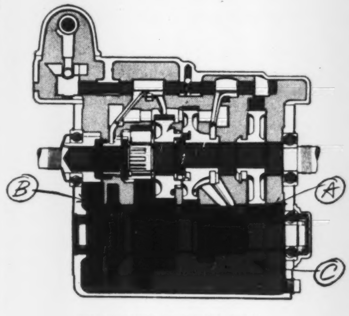
Peter W. Eller, chairman of the board of governors of the Building Trades Employers' Association, has been presented with an engrossed scroll by the Thompson-Starrett, Inc., as a testimonal to his "outstanding contribution to the corporation and to the construction industry". Mr. Eller, who was with Thompson-Starrett, general contractors, for 36 years, resigned to become permanent chairman of the B.T.E.A., an association of 1,000 general and sub-contractors.

Robert H. Seymour has been named engineer of Sumner County, Kan., to succeed Rufus Kirk who resigned last September to become Sedgwick County highway engineer. Seymour, formerly Ottawa County engineer, had worked with the North Dakota and Oklahoma highway departments.



STANDARD ENGINEER'S CASE FILE

Case 1129—Stopping Lube Leaks in Heavy-Duty Gears



HEAVY-DUTY TRANSMISSION

Because compounded RPM Gear Lubricant will not foam, it eliminates a common cause of leakage from gear cases on trucks and other machines working in extreme conditions of temperature and load. Comes in four grades: SAE 80, 90, 140, 250. For spur, spiral and automotive worm gears. (For hypoids, use RPM Multi-Service Gear Lubricant.)

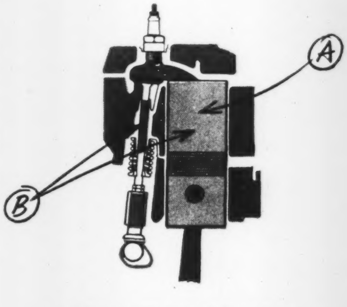
A. Contains foam inhibitor — prevents retention of air whipped into lubricant by rotating gears; breaks bubbles that form.

B. Oiliness compound helps provide tough lubricating film — withstands shock and overloads.

C. High resistance to oxidation prevents deposits; assures lubrication in extreme temperatures.

The stability and high lubricating qualities of RPM Gear Lubricant (Compounded) provide outstanding lubrication for bronze worm gears.

Case 1117—Preventing Starting Wear in Gasoline Engines



GASOLINE ENGINE PISTON AND VALVE

Engines lubricated with RPM Motor Oil had a film of oil on cylinders, valve stems and other parts at all times, even when idle. The film provided lubrication from the instant the engines started to turn over. Recommended for all gasoline engines. Comes in seven grades: SAE 10/10W to SAE 70.

A. Special compound keeps lubricant on hot or cold metal — reduces wear and protects against corrosive moisture in engines.

B. Detergent cleansing agent loosens and removes carbon, gum and lacquer from all parts . . . keeps rings free. Contaminants stay dispersed in the oil and flow out with drainings.

RPM Motor Oil contains other compounds which prevent corrosion of any bearing metal, resist oxidation and stop foaming.

For additional information and the
name of your nearest Distributor, write

**STANDARD OIL COMPANY
OF CALIFORNIA**
225 Bush Street, San Francisco 20, California

The California Oil Company
Barber, New Jersey

The California Company
17th and Stout Streets, Denver 1, Colo.

Standard Oil Company of Texas
El Paso, Texas

RPM

Trademark Reg.
U.S. Pat. Office

NEW LeTOURNEAU *snow plow*

Drift-busting "dynamite on wheels" . . . Tournadozer plowed an average of 2 miles an hour through drifts averaging 5 to 8' deep . . . like this snow-blocked road in Gregory County, South Dakota.

Clears 45 miles per day through frozen So. Dakota drifts up to 14' on "OPERATION SNOWBOUND"

When last winter's 27-inch snow and blizzard hit the Mid-West, Frank Halverson, Bonesteel, South Dakota contractor, equipped his rubber-tired C Tournadozer with the new LeTourneau snow plow . . . dug out farm yards, freed marooned cattle in Gregory County, and helped clear snow-blocked county roads and streets that had been closed for more than two weeks. During one 10-day period of operation, Halverson's Tournadozer *alone* cleared over 300 miles of county highways, and 150 miles of township roads. That's an overall average of 45 miles a day through deep, frozen drifts . . . up to 14 feet! Here's what a local newspaper had to say about its performance: "During the recent snowstorm, and the one this week, Tournadozer proved its value in the community. It goes through deep snow and packed drifts at top speed without hardly slowing up. A whole block of the Bonesteel main street was cleared of snow in a couple of hours, and streets about town in half that time."

Tournadozer works 12 months a year

12 months out of the year, this revolutionary, rubber-tired Tournadozer pays off in more work done. During winter, it gives you a high-speed snow plow for city, county and state highway service. Spring, summer, fall, it's the fastest dirtmoving bulldozer you ever saw. Before you buy any snow plow equipment, check Tournadozer's *year-around* production ability. Write or call your nearest LeTourneau Distributor for complete facts . . . *TODAY*.

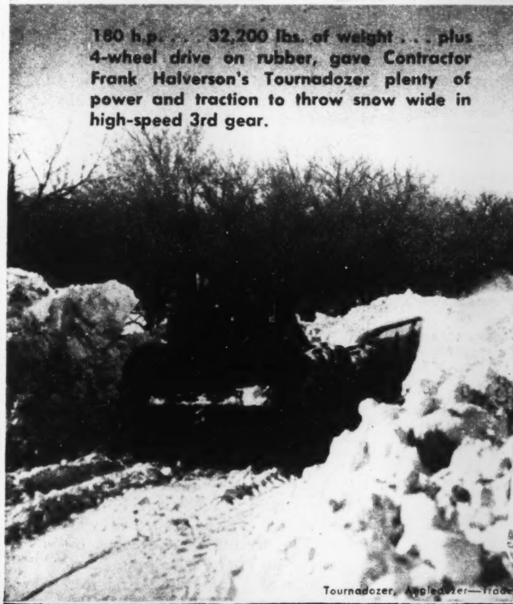
LETOURNEAU HIGH-SPEED RUBBER-TIRED **TOURNADOZERS**

PEORIA, ILLINOIS

IT'S RUBBER THAT PUTS THE ACTION IN TRACTION

opens 450 miles in 10 days

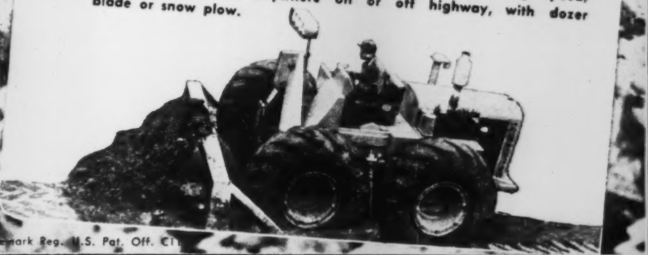
Widening banks on "Operation Snowbound". Note how the Tournadozer's big vertical divider plate eliminated plowing the snow back onto the road.



180 h.p. . . . 32,200 lbs. of weight . . . plus 4-wheel drive on rubber, gave Contractor Frank Halverson's Tournadozer plenty of power and traction to throw snow wide in high-speed 3rd gear.

"V"-type blade mounted on 4-whee drive TOURNADOZER

- ✓ **Big V-type plow** . . . with 12'3" clearing width and 6½'-high moldboard lifts snow quickly . . . flows it high off ends of "plow-share" blade well over the ditch line.
- ✓ **Vertical divider plate,** in center of V-blade, eliminates plowing snow back onto road when widening.
- ✓ **Adjustable shoes** . . . 3 easily-adjustable runner shoes "nose up" or "nose down" plow for peeling off snow and ice without damage to road surface or plow.
- ✓ **19 m.p.h., drift-busting speeds** . . . plus same 4 speeds in reverse . . . speed clearing on both patrolling, and on shuttle-type operation. Instant "no-shift" gear selection means faster operation through use of higher gear ratios.
- ✓ **180 h.p. diesel** . . . 32,200 lbs. of weight behind heavy-duty plow . . . plus short 5'11⅝" wheelbase and 4-wheel drive on giant 21.00 x 25 low-pressure tires, let you use top Tournadozer speeds even in heaviest plowing.
- ✓ **No side-skid,** away from bank . . . close-coupled Tournadozer fits snugly up forward into deep V-section of plow . . . gives powerful, straight-line forward drive.
- ✓ **Full operator visibility** . . . engine in rear puts operator up front where he can see where he's going . . . what he's doing . . . especially in close-quarter street work. There is no neck-stretching. All-weather cab is optional.
- ✓ **Easy electric control** . . . smooth, fast-acting, gives accurate control of blade . . . reduces operator fatigue . . . helps him get more work done on both snow removal and dirtmoving.
- ✓ **Quickly interchangeable** . . . operator changes from plow to regular dozer blade in only an hour — and your Tournadozer's ready to handle dirtmoving work. Tournadozer makes high-speed, self-powered moves anywhere on or off highway, with dozer blade or snow plow.



Tournadozer, Angledozer—Trademark Reg. U.S. Pat. Off. C1

Mail Today

To: R. G. LeTOURNEAU, Inc., PEORIA, ILL. Please send additional information on 19 m.p.h. Super C Tournadozer with:

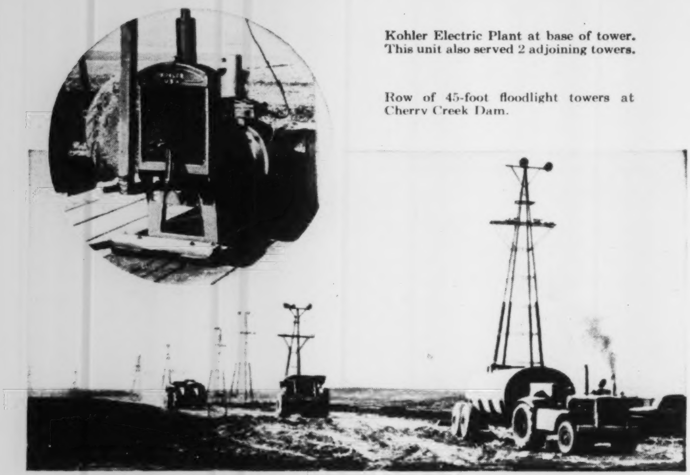
☐ Snow plow attachment ☐ Bulldozer blade ☐ Angledozer

NAME .... TITLE ....

ORGANIZATION .... DEPT. OR DIV. ....

STREET .... CITY .... STATE ....

Types of work contemplated ....



Kohler Electric Plant at base of tower. This unit also served 2 adjoining towers.

Row of 45-foot floodlight towers at Cherry Creek Dam.

Skid-mounted floodlight towers at Cherry Creek Dam powered by

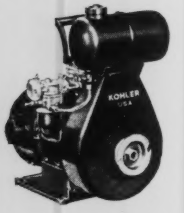
KOHLER
Electric Plants

Twelve skid-mounted lighting towers floodlighted the night shift at Cherry Creek Dam, the main purpose of which is to prevent flash floods in the city of Denver. The towers were skidded to the center line of the dam at night and moved to one side during the day. Kohler Electric Plants supplied the current for individual towers or groups of two or more.

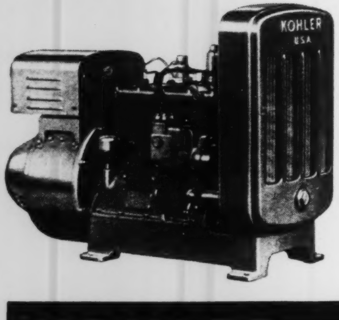
This is but one of countless examples of the steady, reliable service which Kohler Electric Plants provide for major construction projects throughout the nation and in many other parts of the world.

Stand-by protection is another vitally important service provided by Kohler Electric Plants. In industrial plants, municipal buildings, stores, schools, hospitals, theatres, homes and farms, they safeguard life and property by assuring uninterrupted operation of electrical equipment when storms or accidents cause failure of central station service.

Sizes range from 350 watts to 10KW including two new portable plants, one rated 350 watts, 115 volts weighing 70 pounds and another 500 watts, 6-12 volt battery charging weighing 77 pounds. Because of their light weight and small dimensions, both models have many uses in the construction market. Write for illustrated folder D-6. Kohler Co., Kohler, Wisconsin.



Model 350M21-K7, 350 watts, 115 volt AC. Manual control. Length 17 3/16", width 11 1/16", height 16 7/8".



Model 3A21, 3KW, 115 volt AC. Length 41", width 16", height 27¼".

KOHLER OF KOHLER
PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS

UNIT PRICES

Chesapeake Bay Bridge tabulations available

Engineering News-Record will send its readers unit prices on a few portions of the 4½-mi. Chesapeake Bay Bridge project. The portion now available includes bids on 25 piers of this structure, which will cross the bay near Annapolis, Md.

It will be recalled that the Maryland State Road Commission originally invited bids on the entire substructure (ENR Mar. 31, p. 29). One bid that was about $10,000,000 over the engineers' $25,000,000 estimates was received. The state then decided to break the job down into sections and ask for bids on the sections. The tabulations offered herewith cover one of those sections. No award will be considered until all sections are bid.

The work of this section includes construction of piers 1 to 22, and 29 to 31. An alternate excludes piers 1 to 10. Piers are supported on H-piles, and they are to have permanent steel forms. A substantial portion of the work is in open water of the Chesapeake Bay, so heavy marine equipment is needed. Maritime insurance is high because of sudden and violent squalls in the bay. In addition there is danger of ice damage to completed work. Steel H-piles are to be furnished by the State. Wages range $1.35 to $2.65.

Two bids were received July 5. Frederick Snare Corp., New York, bid $3,666,939 on the whole job and Merritt-Chapman and Scott bid $3,973,464. The respective bids on the alternate that excludes the first ten piers are $2,918,518 and $3,316,628.

San Mateo improves El Camino real

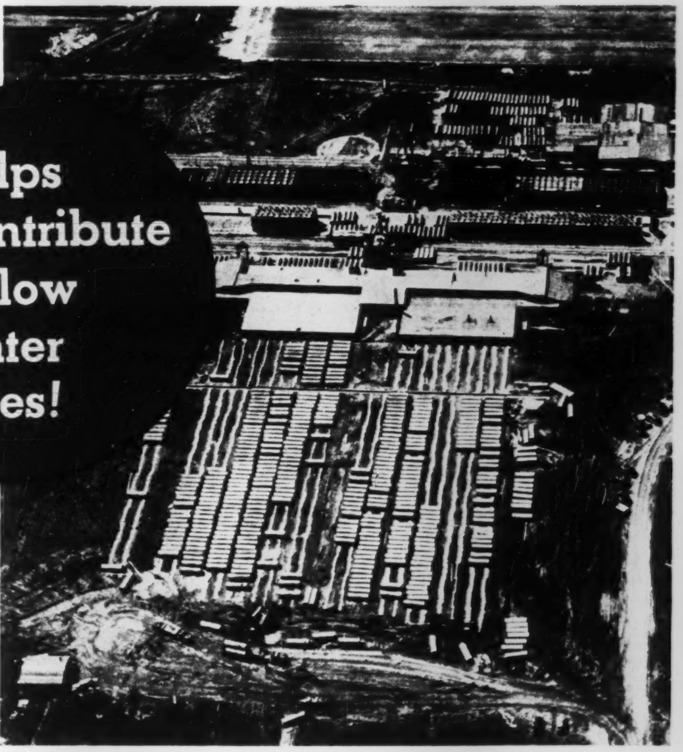
L. C. Smith, of San Mateo, Calif., on July 5 was the low of three in bidding for a street-improvement job in his home town. His price was $77,966, compared with second and third bids of $85,780 and $104,187.

The work includes 6,670 cu. yd. of grading, 4,100 cu. yd. imported borrow, 690 cu. yd. crusher-run base; 490

(*Continued on page 96*)

Unite price reports on jobs cited in these columns will be mailed to readers of Engineering News-Record on request at no charge. Address: Manager, Business News Dept., Engineering News-Record, 330 W. 42nd St., New York 18, N. Y. Identify by quoting headline as used herewith, and be sure to give full mailing address.

LOCK JOINT PIPE helps contribute to low water rates!



A temporary Lock Joint pipe plant at the site. Use of local labor and materials returns to the community a large part of the pipeline cost.

Lock Joint's easy installation means low laying cost.

Although a modern water supply system represents a sizeable investment, sound engineering makes it possible to keep water rates at a minimum.

Knowing this, economy-minded water supply engineers specify Lock Joint Reinforced Concrete Pressure Pipe for mains of 16″ or larger. Lock Joint's low initial cost, its long life, its exceptionally high carrying capacity and its negligible maintenance cost assure the utmost service for the consumer's dollar.

Water works officials who have installed Lock Joint pipe lines point to these lines as the most economical in their entire systems.

We shall be glad to discuss your requirements. Simply write or call our nearest office.

LOCK JOINT PIPE COMPANY

Est. 1905

P.O. Box 269, East Orange, N. J.

PRESSURE PIPE PLANTS: Wharton, N. J. • Turner, Kan.

BRANCH OFFICES: Cheyenne, Wyo. • Denver, Colo. • Kansas City, Mo. • Valley Park, Mo. • Chicago, Ill. • Rock Island, Ill. Wichita, Kan. • Kenilworth, N. J. • Hartford, Conn.

SCOPE OF SERVICES—Lock Joint Pipe Company specializes in the manufacture and installation of Reinforced Concrete Pressure Pipe for Water Supply and Distribution Mains in a wide range of diameters as well as Concrete Pipe of all types for Sanitary Sewers, Storm Drains, Culverts and Subaqueous Lines.

JOINT
ced Concrete
URE

Portable Dredge keeps two reservoirs free of silt!

The Corps of Engineers, U. S. Army, needed a portable dredge to remove accumulated silt from several reservoirs of the Washington Aqueduct water supply division which is an integral part of the Washington, D. C. water system. The operating machinery, consisting of the dredging ladder, dredging pump, hauling and hoisting machinery (designed and built by Ellicott for this 8-inch hydraulic dredge and placed on a hull of Navy wartime cubes) met the requirements of the U. S. Army Engineers to a "T".

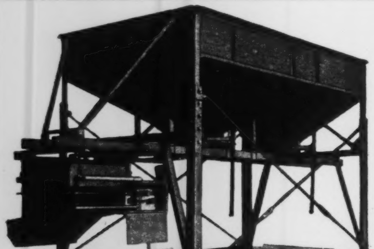
Complete Line of from 6 to 30-inch dredges for all requirements.
64 Years of Experience with hydraulic dredges.
Undivided Responsibility—designed, built, delivered under one contract.
Proved Performance in the U. S. A. and abroad.

The dredge is *portable* . . . can be easily disassembled for shipment by truck from one land-locked reservoir to another. And, *operation is clean* . . . electric operation keeps deleterious substances out of the water.

If you have a dredging problem, see Ellicott first! Only Ellicott is equipped to design and build, *in its own plant*, any size, any type dredge for *any* kind of service. Write for free bulletin 780. ELLICOTT MACHINE CORP., 1603 Bush St., Baltimore 30, Maryland.

ELLICOTT ***Hydraulic Dredges***

ELLICOTT



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—Reduces Your Job Cost
Use with a
10S-11S-14S-16S Mixer

- Complete—with scale for two or three aggregates.
- With two or three overhead storage bins.
- For use on culvert—bridge—curbing—foundation jobs.
- Wherever above size mixers are in operation

Prompt Delivery - Write or Wire
Mftd. by
WINSLOW SCALE CO.
TERRE HAUTE, IND.
Distributors Located throughout U. S.

tons plant-mix asphalt; 7,650 ft. of concrete curb and gutter; 45,420 sq. ft. of 4-in. concrete sidewalk and 3-in. cushion; together with other items, mostly drainage facilities. There are 1,780 ft. of concrete pipe varying in diameter from 12 in. to 30 in. Part of this pipe is in cradle.

Kathman, and Tower Co. gets Washington bridge

Ten contractors bid June 29 on a 175-ft. bridge job in Mt. Baker National Forest, Washington. On July 6 the work was awarded by the Portland office, Public Roads Administration, to Herman Kathman and Tower Construction Co. Inc., Seattle, the low bidder at $62,622.

This bridge is on Sauk River Road, at Whitechuck River in Snohomish County. Work includes grading and structural steel bridge with reinforced concrete deck and rail. Length of the grading project is 820 ft. Contract time is 160 days. Rail transportation is available at the site, and wages range from $1.83 to $2.40. Owner furnishes structural steel for bridge, and piers must be placed during short low-water period. Principal unit-priced items are: 10,000 cu. yd. unclassified excavation for borrow; 404 cu. yd. concrete (air-entrained, low-alkali cement); 48,500 lb. reinforcing steel; 190,000 lb. structural steel erection.

Woodrich Construction Co. low on Minn. county road

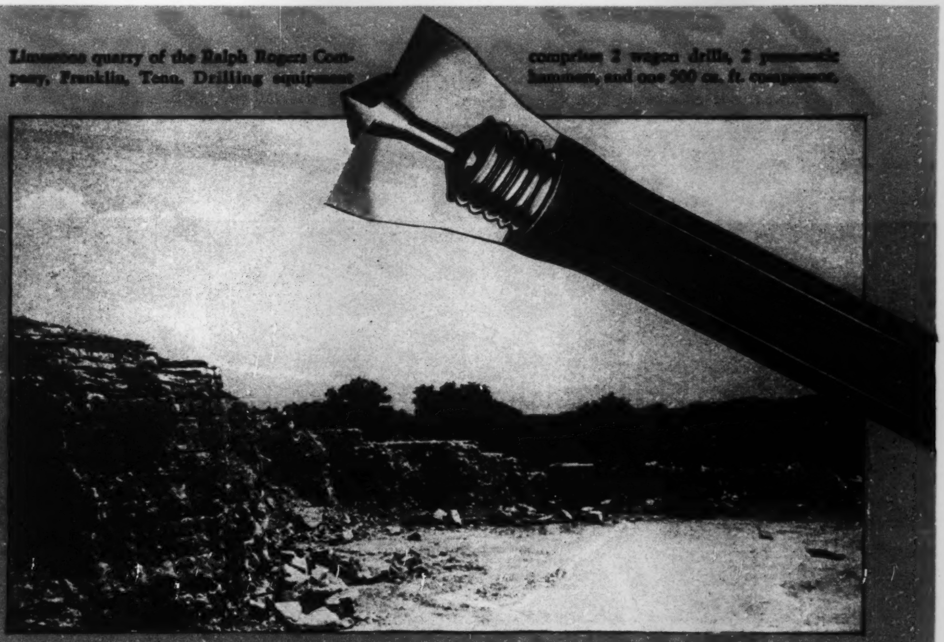
On July 11 five bidders submitted their prices on grading and paving 4.6 miles of Hennepin County, Minn. (Minneapolis) road. Woodrich Construction Co., of Hopkins, Minn. was low, at $105,375. High was $143,339, and the engineer's estimate was $162,426. The job includes 15,373 cu. yd. excavation, 31,840 sq. yd. concrete, as well as 2,723 cu. yd. gravel base and several small culverts, mostly metal.

Contract time is 60 days; rail, highway and water transportation are available; wages range from $1.53 to $1.85.

Repair of 62-in. conduit under way in St. Louis

On July 19, two bidders submitted prices to the city of St. Louis, Mo., on cleaning, repairing and lining 19,500 ft. of 62-in. water conduit. Centriline Corp., New York, was low at $86,619. The second bid was $90,017. (Engineer's estimate $82,200.)

Lining is to be cement-mortar, 3/8 in. thick along 19,300 ft. of the conduit, 1/2 in. thick on 100 ft. and 5/8 in. thick on 100 ft. Wages range from $1.50 to $2.50. Truck transportation to site.



Limestone quarry of the Ralph Rogers Company, Franklin, Tenn. Drilling equipment comprises 2 wagon drills, 2 pneumatic hammers, and one 500 cu. ft. compressor.

Why this large paving contractor uses TIMKEN® Rock Bits

The Ralph Rogers Company of Franklin, Tenn., operates a limestone quarry in connection with the production of asphalt aggregate.

Rock drilling at this quarry is a 100% Timken rock bit operation because the quarry operator has found Timken rock bits superior in performance and more economical in use than the bits previously used.

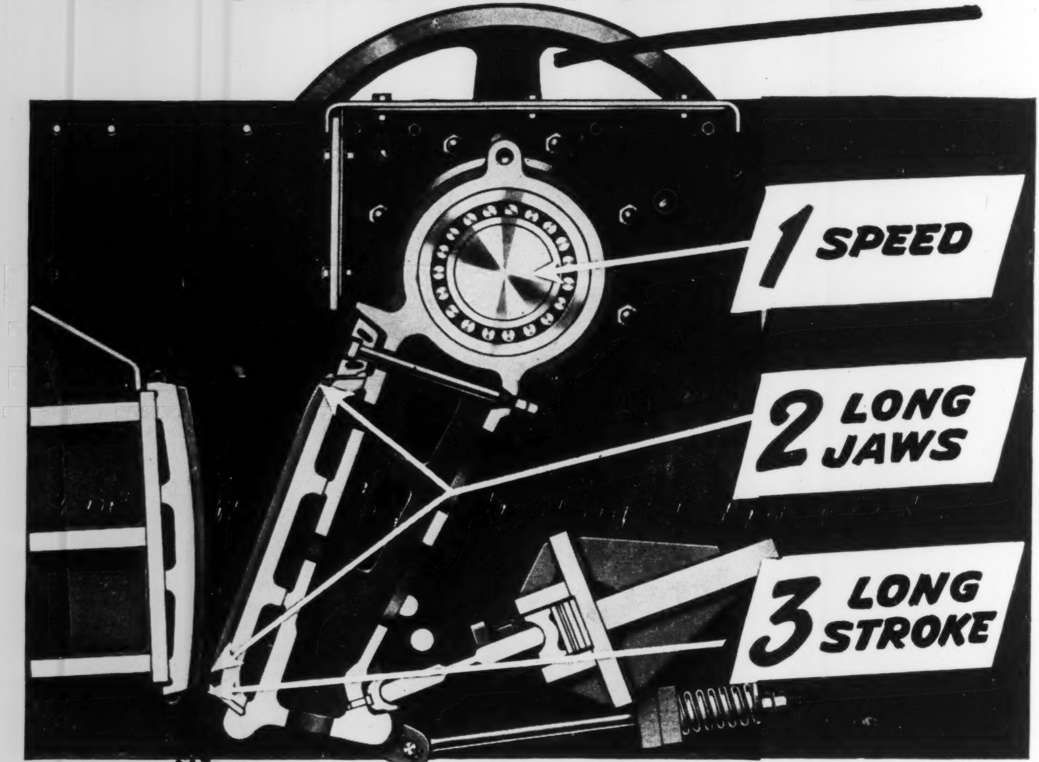
Furthermore, by preventing the steel from bottoming in the bit, the Timken one piece, solid steel shoulder construction has eliminated drill steel breakage that previously was a source of delay and expense.

No matter where you are, there's a Timken rock bit distributor within telephone call. Conversion and reconditioning shops also are conveniently located for quick service. Put Timken rock bits to work now; cut drilling costs, increase production.

TIMKEN
TRADE-MARK REG. U. S. PAT. OFF.
ROCK BITS

THE TIMKEN ROLLER BEARING COMPANY
CANTON 6, OHIO · CABLE ADDRESS "TIMROSCO"

It Takes ALL 3



1 SPEED
2 LONG JAWS
3 LONG STROKE

to put the maximum amount of rock through a jaw crusher

No other crusher *excels* the A-W in *any one of the three.*

No other crusher *equals* the A-W in *all three.*

That's why no other crusher turns out as much rock.

AUSTIN-WESTERN COMPANY • AURORA, ILLINOIS, U. S. A.

Austin Western

CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

ELSIE EAVES, Manager *J. A. MAHONEY, Reports* *M. R. ROESSLER, Statistics*

WATER SUPPLY

BIDS ASKED

August 10

Minn., Rochester—State Dpt. Admin., P. T. Peterson, dir., purchases, 19 State Capitol, St. Paul, water sys., State Hospital, Proj. 958G, elevated water tank. Approx. $28,000 each. Plans deposit $10. Ellerbe & Co., E. 505 First National Bank Bldg., St. Paul, engrs.

August 11

La., Metairie — East Jefferson Water Wks. Dist. No. 1, Jefferson Parish, Metairie, water distr. sys. addns., East Jefferson Waterworks. Plans deposit $15. S. N. Applewhite, 424 Milanden St., New Orleans, Zone 18, engr.

Tenn., Nashville—City, Charles Longhurst, city engr., City Hall, 9,075 ft. 20 in. watermains; 4,608 ft. 12 in. watermains and fittings. Plans deposit $30. CD 1/17.

August 16

Tex., Beaumont—City, City Hall, pumping station imprvs. and enlarging. $200,000. Freese & Nichols, 407 Danciger Bldg., Fort Worth, engrs. CD 5/13, under LB.

Tex., Wilmer—City, Wilmer, completion of WW sys. expans. $30,000. Plans deposit $25. J. H. Flood & Co., 707 Amicable Bldg., Waco, engr.

August 17

Pa., Cambridge Springs—Cambridge Springs Boro, setting and connecting pumps, concrete lining and clearwell sedimentation basin, electrical wiring and appliances, rebuilding filter beds. Plans deposit $20. Hill & Hill, 24 East Main St., North East, engrs. Bids 6/3 rejected. CD 5/19.

August 19

●O., Cleveland — City, E. J. Corwin, dir. P. Utilities, filtration plant, pump bldg., $3,000,000. Havens & Emerson, Leader Bldg., Cleveland, consult. engrs. CD 5/16.

August 22

Tex., Lampasas—City, W. M. Brook, mayor, City Hall, WW sys. extens. and imprvs. $100,000. Plans deposit $20. D D. Nixon, city engr. CD 2/28.

Bids Asked

Tex., Bellaire—J. S. Norman Building Corp., 4815 Richmond Rd., Houston, waterlines area of Long Point and Tech Rds. $30,000. Hilton & Coulson, 3821 Fannin St., Houston, engrs.

LOW BIDDERS

La., Opelousas—Town, Town Hall, July 12, water distr. sys. addns., from Townsend Bros., Constr. Co., Bunkie, **$139,574.** CD 6/30

Mass., Newton—City, Water Comrs., City Hall, July 14, c. i. water pipe line, Winchester St., etc., from Bonded Constr. Co., 40 Kensington St., Newtonville, **$31,772.**

Mo., St. Louis—City, c/o Frank J. McDevitt, pres., Bd. P. Service, 304 City Hall, July 19, cleaning, repairing, lining with cement mortar, 62-in. conduit No. 1, between Stacy Park Reservoir and Station 60 plus 00 between Westwood Dr., St. Louis Co. and Hampton Ave., St. Louis, from Centriline Corp., 140 Cedar St., New York, N. Y., **$86,619.** Est. $82,200. CD 6/21.

†N. M., Albuquerque—U. S. Eng., P.O. Box 1538, July 8, water supply sys., incl. 3 gravel water-packed well, 24 in. diameter 1,000 ft. deep, Serial No. 291-49-183 from Roscoe Moss Co., 4360 Worth St., Los Angeles, Calif., **$53,661.** CD 6/16.

Okla., Enid—City, Clint O. Thrasher, clk., City Hall, July 14, laying approx. 98,000 lin. ft. 30 in. lock-joint prestressed concrete cylinder pipe and setting control equip. from B. & M. Constr. Co., Petroleum Bldg., Oklahoma City, **$189,000.** CD 7/5.

Pa., Erie—Bureau of Water, Erie, June 28, WW imprvs. incl. installing pumps, piping equip., construct well, electrification of present facilities, Contr. No. 9 from Sessinghaus & Ostergaard, 1115 Peach St., **$540,200.** CD 5/23.

S. D., Huron—City, Huron, rejected bids July 11, water softening plant, L. B. $604;506. Est. $408,000. CD 6/9.

Tenn., Tiptonville—City, E. E. Labo, mayor, Tiptonville, July 15, WW imprvs., incl. extens. and imprvs. to water treatment plant incl. 2 new filters addn., aerator, settling basin; rehabilitating 2 filters, incl. 50,000 ft. 8, 12 and 15 in. sewers, manholes, etc. from Volz Constr. Co., Ripley, **$79,200.** CD 6/21.

Tex., Gatesville—City, c/o Dr. K. R. Jones, mayor, Gatesville, July 22, water distr. sys. imprvs. from Mid-West Contrg. Co., 403 S. Haskell St., Dallas, **$169,964.** Est. $150,000. Paul Gregory, 2204 Fort Worth Natl. Bank Bldg., engr.

Tex., Longview—City, July 18, water supply pipeline Proj. 2 from Barry Constr. Co., 4108 Old Spanish Trail, Houston, **$92,640.** Est. $90,000. CD 7/11.

CONTRACTS AWARDED

Ala., Montgomery — City, Montgomery, 3 gravel wells, to Layne Central Co., First National Bank Bldg., Montgomery, **$69,700.** Bids 5/17. CD 5/3

Ark., Pocahontas—City, Pocahontas, water plant extens., to M. O. Branton Constr. Co., Gazette Bldg., Little Rock, **$66,398,** est. $65,000. Bids 7/18, awarded 7/18. CD 7/7

Kan., Ellsworth—City, city clk., City Hall, water softening plant, auxiliaries and appurtenances etc., to Grundeman Constr. Co., Holton, **$92,000.** Est. $95,000. Wilson & Co., 223 N. Santa Fe St., Salina, engrs. Bids 7/19. 6/29.

N. D., Bowbells—City, Bowbells, WW and watermains, water tower, sewers, repairing sewer lift to Paul R. Kemper, Kemper Bldg., Minot. **$99,586.** Bids 7/13. CD 6/22.

N. D., Fargo—City, Fargo, watermains to Haggart Constr. Co., Fargo, **$34,349.** Bids 7/12.

Tex., Corpus Christi—City, City Hall, 16 in. c. i. watermain along Southport from Baldwin to Horne Rd. **$79,867;** 6,700 lin. ft. 10 in. c. i. waterlines along Agnes St., Duncan to Airport Rd. Approx. **$37,000,** force-account. Robert L. Otto, city engr. CD 10/15/47.

Tex., Lake Jackson (Freeport P.O.)—City addnl. waterlines and facilities Own forces. **$50,000.**

Tex., Pasadena—Danham & Hayes, Pasadena, c. i. waterlines. Own forces. **$40,000.** A. D. Schmid, 3710 La Branch St., Houston, engr.

Tex., Port Neches—City, Port Neches, water line extens. into 18 acre addn. force-account. **$30,000.** CD 9/25/47.

Tex., San Antonio—City Water Bd., 106 W. Market St., 24 in. artesian water supply well, Newell to J. R. Johnson Co., 105 Humble St., **$34,000.**

Wash., Seattle — City, County - City Bldg., watermains in 47 Ave. S. W., to Thorburn & Logozo, 4608 36 Ave. S. W., Seattle, **$104,633,** est. $104,629. Bids 7/20.

Wash., Spokane — City, City Hall, general contract, 32x164 ft. steel, concrete pumping plant 40 ft. high and installing equip., to McGinnis Constr. Co. and Henry George & Sons, Hutton Bldg., Spokane, **$193,713;** Bids 7/21. CD 6/20.

Alaska, Anchorage—City, City Hall, rebuilding water supply sys. to Brady-Stateside Constr. Co., 905 10 Ave. S., Seattle, Wash., **$446,500.** Bids 7/13.

Ont., Rainy River—Municipality, Rainy River, waterlines, to George Armstrong, Fort Frances, Approx. **$30,000.**

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $28,000; other public works $50,000; industrial buildings $68,000; other buildings $250,000.

Classes of Construction

(Name in order of Listing)

- **Water Supply**
- **Sewers, Waste Disposal**
- **Bridges**
- **Streets & Roads**
- **Earthwork, Waterways**
- **Latin America**
- **Public Buildings**
- **Commercial Buildings**
- **Industrial Buildings**
- **Unclassified**

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.;

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

†	**Federal Government**
●	**Project of $1,000,000 or over.**
ENR	**Engineering News-Record**
CD	**Engineering News-Record Construction Daily**

SEWERS, WASTE DISPOSAL

BIDS ASKED

August 10

Md., Baltimore—Mayor & City Council, City Hall, 3 pug mills, 3 rotary drying units, Sludge Drying Plant, Back River Sewage treatment works, Sanitary Contr. 351, plans deposit $5. John J. Hunt, sewerage engr., CD 3/18/48.

Tex., Houston—City, City Hall, 900 Brazos St., sludge disposal plant unit, $450,000. Plans deposit $50. Extended date. Greeley & Hansen, 220 S. State St., Chicago, Ill., engrs. John G. Turney, 2405 San Jacinto St., consult. engr. CD 7/19.

August 11

Mass., Boston—Metropolitan Dist. Comn., 20 Somerset St., Boston, furnishing, delivering sewage pumps and mechanically cleaned bar screens, Alewife Brook Pumping Station, Somerville, Contr. 156, Plans deposit $5., Karl R. Kennison, ch. engr.

Minn., Rochester—State, Dpt. Admin., P. T. Peterson, dir. purchases, 19 State Capitol, St. Paul, sanitary sewer sys., Proj. 958c, betterment program, State Hospital, Approx. $50,000. Plans deposit $10. Ellerbe & Co., E. 505 First National Bank Bldg., Minneapolis, engrs. CD 6/20/45.

August 12

S. C., Rock Hill—City, Contr. B, sanitary sewer imprvs., incl. 9 mi. 21 to 36 in. outfall sewers, 16 mi. 8 to 18 in. lateral and trunk sewers and sewage pump. station. Plans deposit $25. Wiedeman & Singleton, C & S National Bank Bldg., Atlanta, Ga., engrs.

August 15

Calif., Colusa—City, City Hall sewage treatment plant, $65,000. Plans deposit $25. Arthur Reitter, City Hall, city engr. Bids 7/18, rejected. CD 6/27.

August 15

Kan., Columbus—Lannie Ruth Dixon, city clk., City Hall 2 sewage disposal plant imprvs. Plans deposit $15. Russell L. Culp, Garnett, consult. engr.

N. Y., Port Chester — at office Daniel A. O'Connell, clk., Police Headquarters Bldg., 350 N. Main St., Contr. 1, refuse incinerator, Contr. 2, heating, Contr. 3, plumbing, Contr. 4, electrical. Plans deposit $15. CD 11/13/44.

S. D., Rosholt—City, sewers, manholes, twin lift station, sewage plant. $60,000. A. S. Mannes, 211 Western Union Bldg., Aberdeen, engr. CD 12/6/45.

August 16

Calif., Los Angeles — Bd. Supervs., Los Angeles Co., 501 Hall of Records, 3.56 mi. 8 to 12 in. vitr. clay sanitary sewers in Muscatel Ave. and other streets, $78,400. C. E. Arnold, Co. engr. CD 6/16.

Calif., Santa Rosa—City, City Hall, 6,450 ft. 10 to 48 in. reinforced and corrugated metal storm drains on Ross, Mendocino, Johnson, Humboldt and B Sts., over $50,000. Plans deposit $20. Frank B. Sarles, City Hall, city engr.

Minn., Ada — Village, J. V. Shelland, clk., Village Hall, 14,000 lin. ft. sanitary sewers, 3 sewage pumping stations, $50,000. Plans deposit $15. W. C. Larson, Detroit Lake, engr.

August 19

Calif., Davis—Bd. Regents, University of California, Berkeley, sewage treatment plant and refuse disposal unit on Davis Campus, over $50,000. Plans deposit $50.

August 22

Calif., Crestline—Crestline Sanitation Dist., Courthouse, 89,670 ft. 6 to 15 in. vitr. clay pipe sewer lines and treatment plant, 502 manholes, over $50,000. Currie Engineering Co., Anderson Bldg., San Bernardino, engrs. CD 3/18/46.

Tex., Lampasas—City, City Hall, sanitary sewer sys. extens. and enlargement. $75,000. Plans deposit $20. D. D. Nixon, city engr.

August 24

Calif., San Francisco—Dpt. P. Wks., City Hall, North Point sludge treatment plant near Islais Creek. Approx. $50,000. Plans deposit $100. Ralph Wadsworth, City Hall, city engr. CD 3/23/48.

Conn., Stratford—Town, town clk., Town Hall, sewage disposal plant. Bowe, Albertson & Assoc., 110 William St., New York, 7, N. Y., engrs. CD 10/2/45.

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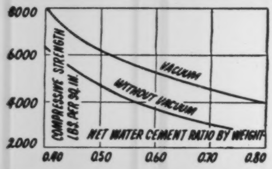

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Bids Asked

Tex., Bellaire—J. S. Norman Building Corp., 4815 Richmond Rd., Houston, sewage disposal plant and lines area of Long Point and Tech Rds. $65,000. Hilton & Coulson, 3821 Fannin St., Houston, engrs.

LOW BIDDERS

California—State Div. Architecture, P. Wks. Bldg., Sacramento, July 19, sewage disposal plant at Samuel P. Taylor State Park from Bailey Constr. Co., 720 Francisco Blvd., San Rafael, **$60,290.** CD 6/27.

Calif., Los Angeles—Bd. Supervs., Los Angeles Co., 501 Hall of Records, 3.05 mi. 6 to 10 in. sanitary sewers in 16 St. and other streets, C. I. 1242, from Craig & Joy Constructors, 2241 Curry St., Long Beach, **$93,097,** est. $77,290. CD 6/28.

Calif., Santa Monica—City, 1685 Main St., July 12 removing, replacing 29,068 ft. in. vitr. clay pipe, 38 manholes and sewer facilities, from Northwest Excavating & Grading Co., 1154 E. Colorado St., Pasadena, **$114,911.**

Ga., Atlanta—City, Atlanta, cancelled bids to have been opened July 18, various lateral sewers. Project postponed.

●Ill., Chicago—City, Dpt. Purchases, Contracts & Supplies, City Hall, July 21, rein.-con. main drain S. Ashland Blvd., to S. Desplaines Sect. Congress St., 2425.1-D, West Route Superhighway, from John C. Tully Co., 33 N. La Salle St., **$1,131,400.** CD 7/12.

La., Shreveport—City, City Hall, July 12, 2 sewage pumping stations, from Barnet Brezner, Broadmoor, P. O. Box 654, Alexandria, **$224,700.**

Md., Towson—Bd. Comrs. Baltimore Co., Towson, July 18, sewage force main, Contr. 159-S. from Utilities Constr. Co., Towson, **$125,384** CD 7/7.

Minn., Moorhead—City, P. A. Cook, City Hall, rejected bids June 27, addns. and alterations to sewage pumping station Sect. 2; waste treatment plant, Sect. 3, L. B. Sections 1, 2, and 3, **$444,700.** CD 6/13, under LB.

N. Y., Irondequoit—Town Bd. at office Fred E. Hussey, clk., 1340 Ridge Rd., E., Irondequoit (Rochester 5), rejected bids July 7, addnl. housing and storage bldg. in connection with treatment plant of North St. Paul Sewer Dist., imprvs. and reconstruct facilities thereof, appurtenances and modification existing plant of sewage in such sewerage sys. CD 5/10.

Ore., Portland—City, City Hall, received no bids July 21, storm and sanitary sewer proj. S. W. Slavin and S. W. Dosch Rds. **$430,701.** Ben S. Morrow, c/o owner, engr.

●Pa., Phila.—Dpt. Pub. Wks., City Hall Annex, June 29, Southwest Sewage Treatment Works, primary settling tank and appurtenances from Hughes-Foulkrod Co., 1505 Race St., **$1,217,304.** CD 5/31.

Tex., Beaumont—City, City Hall, storm sewers, Gaylord Addn. from Trotti & Thomson, Inc., 2940 Crockett St., **$58,946.** R. C. Black, city engr. CD 6/26/47.

Tex., Houston—City, City Hall, 900 Brazos St., July 20, 7 mi. 8 in. sanitary sewer lines various locations, from George Constr. Co., 11000 Market St. Rd. **$90,058.** Est. $125,000; storm sewer for Harris Gulley from J. G. Holland Constr. Co., 1602 Old Spanish Trail Rd. **$218,424.** Est. $294,300. CD 7/12.

Tex., Longview — City, Longview, outfall sewers at Grace's Creek from Roy Barry, Kilgore, **$29,853.** Materials by owners, **$25,000.** CD 7/11.

Tex., San Antonio—City, City Hall, July 21, 24 in. line sanitary sewer main from Olmos Basin connecting to Airport main, to Broadway at Breckenridge, etc. from Truehart & Caldwell, 208-9 Insurance Bldg., **$121,488.** CD 7/13.

Tex., Smithville — City, July 18, sanitary sewer collection sys. from Howard T. Barry, 2103 Southgate Blvd., Houston, **$68,751*****sewage treatment plant from R. F. Jordan, Box 266, Angleton, **$76,379.** CD 7/8.

CONTRACTS AWARDED

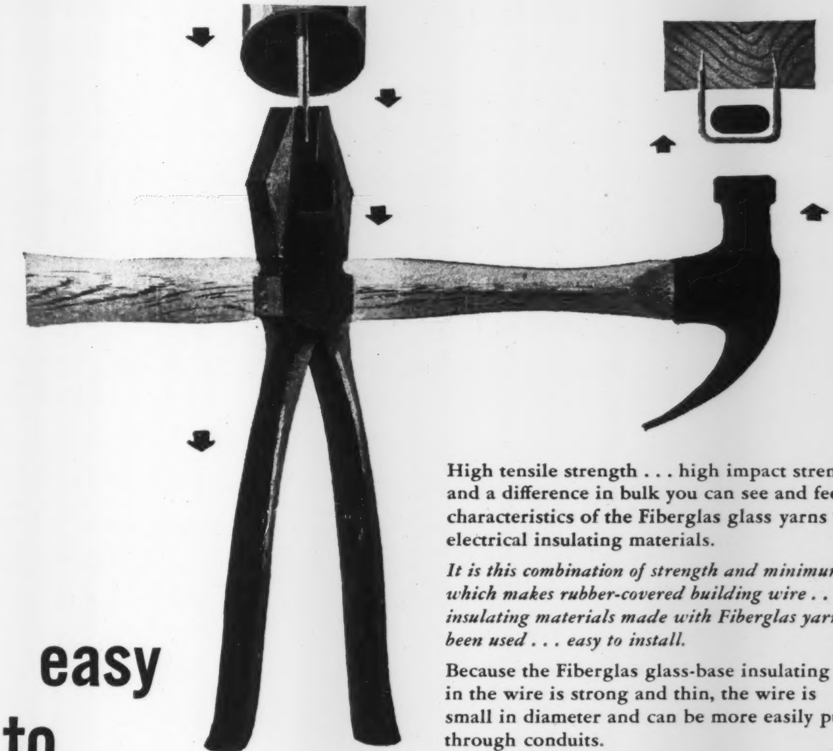
Calif., Los Angeles—Los Angeles Co. Sanitation Dist. 3, 1206 S. Maple St., 13,000 ft. 30 in. rein.-con. pipe, North Long Beach Trunk Sewer Sect. 1, to Milosevich & Zarubica, 1533 W. Olympic St., Montebello, **$131,906.** Bids 7/13, awarded 7/13. CD 6/17.

Calif., Los Angeles—Los Angeles Co. Sanitation Dist 1, 1206 S. Maple Ave., 7,800 ft. 30 and 36 in. rein.-con. pipe, California Ave. Exten. Sewer Sect. 3, South Gate, to Hermco Constr. Co., 1680 N. Vine St., Los Angeles, **$119,952.** Bids 7/13, awarded 7/13. CD 6/17.

Calif., Los Angeles—City, 163 City Hall, sanitary sewer in Myra Ave., Relief Sewer Dist. 2, Unit A, to R. A. Wattson, Co., 5528 Vineland Ave., **$473,754;** Relief Sewer Dist. 2, Unit B, to Izzi & Tomovich, 1033 Arden St., Temple City, **$183,522.** Bids 7/6, awarded 7/18. CD 6/21.

Calif., Los Angeles—Bd. Supervs., Los Angeles Co., 501 Hall of Records, 4.48 mi. 8 to 18 in. clay sanitary sewers in Roosevelt Ave., to George Miller, 3032 Bandini Blvd., Los Angeles, **$121,388.** est. $117,500. Bids 7/5, awarded 7/15. CD 6/14.

Calif., Los Angeles—Bd. Supervs., Los Angeles Co., 501 Hall of Records, 8.36 mi. 8 to 10 in. vitr. clay sanitary sewers in Glendora



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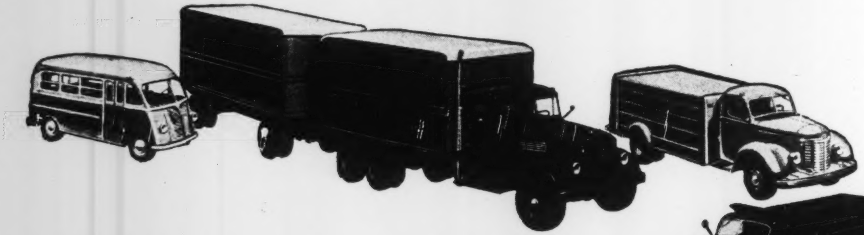

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Ave. and other streets, to Robert Vlacidi, 2901 Worthen Ave., Los Angeles, **$205,454,** est. $191,177. Bids 6/8, awarded 7/5. CD 6/6.

Calif., Portola—City, City Hall, sewage sys. imprvs., incl. sewage treatment plant, pump station, etc., Schedule 1, to E. V. Lane Co., Box 417, Palo Alto, **$106,860;** Schedule 3, to W. M. Shives, 5959 Vencie Blvd., Los Angeles, **$63,272.** Bids 7/15, awarded 7/15. CD 7/7.

Ill., Peoria—Greater Peoria Sanitary Dist., Ft. Darst St., Peoria, sanitary sewer sys., to serve Richwoods area, between Peoria and Peoria Heights, to Bishop Sewer & Water Treatment Co., 830 S. Bishop St., Chicago, **$152,202.** Bids 7-15. CD 6/28.

Ill., Princeton—City, City Hall, 4 mi. 8 and 10 in. sanitary sewers, to Ingemanson Bros., Caledonia Minn., **$52,256.** (Correction-Contractors address) Bids 6/28. CD 7/15, under LB.

Ia., Waterloo—City, City Hall, Sect. 2 and 4, inside interceptors and outside interceptors, to John Roof & Sons, Waterloo, **$109,143;** Sect. 1, 5 and 6, storm water pump stations, pumping equip. and razing bldgs., to E. B. Spencer Constr. Co., Waterloo, **$71,258;** Sect. 3, outside interceptors, river to alley to Edward M. Rocho Constr. Co., Freeport, Ill., **$58,996.** Grand total $239,397. Bids 7/6. CD 6/30.

Mo., Caruthersville—City, City Hall, sewers and pumping station, to Douglas Constr. Co., Springfield, **$133,333.** Bids 7/11. CD 6/28.

N. D., Fargo—City, Fargo, trunk storm sewer, to Northern Imprv. Co., Fargo, **$136,692.** Bids 7/12.

Tex., Dallas—City, Earl Goforth, secy., City Hall, Main and Harwood Sts., sanitary sewers, Contr. No. 201, Urbandale Addn. to E. L. Dalton, 3003 Hawes St., **$53,522.** CD 12/1.

Tex., Pasadena—Danham & Hayes, Pasadena, sanitary sewers. Own forces. **$70,000.** A. D. Schmid, 3710 LaBranch St., Houston, engr.

Tex., Port Neches—City, Port Neches, sanitary sewer line extens. into 18 acre addn. force-account. **$52,000.**

Ont., Toronto—North York Twp., A. G. Standing, clk., 5145 Yonge St., sewage treatment plant, Jane St. and Wilson Ave., to Ramsay Contg. Co. Ltd., 17 Perth Ave., Approx. **$150,000.** G. H. Baker, c/o owner engr. CD 5/9.

BRIDGES

BIDS ASKED

August 10

+Ohio—U. S. Eng., Madison Ave. and 8 St. West, Huntington, 18, W. Va., relocation of the Baltimore and Ohio R. R., Dillon Reservoir, Dillon Falls underpass. Serial No. CIVENG-46-022-50-12. CD 7/14.

August 11

+Wyoming—U. S. Forest Service, P. O. Bldg., Denver, Colo.,

Fremont Co.—construct 2 bridges and approaches on Warm Springs T. T. 329 and Union Pass T. T. 457, Shoshone National Forest.

LOW BIDDERS

Maryland—State Hy. Dpt., Baltimore, July 21, substructures Piers 1 to 10 inclusive, as conventional Cofferdam type piers, supported on steel H. piles, Chesapeake Bay Bridge, Contr. CBB 10-6-87, Sandy Point and Stevensville, Anne Arundel and Queen Anne Counties, from Merritt-Chapman & Scott Corp., 17 Battery Pla, New York, N. Y., **$613,901.** CD 6/22.

Pennsylvania—State Hy. Dpt., 506 N. Office Bldg., Harrisburg, July 22, repairing 3 span 429 ft. through steel truss bridge over Clarion River, Route 554 (R-1), T.R. 966, Clarion Co. from High Welding Co., 202 W. James St., Lancaster, **$51,143*****construct I-beam bridge over Briar Creek and crushed aggregate base with bit. surf. 839 ft. L.R. 4 (7). T.R.U.S. 11, Columbia Co. from Paul E. Rarick, Inc., 303 Stief Bldg, Shenandoah, **$63,204*****repairing 3 span through steel truss bridge over Cheat River, 522 ft. L.R. 116, T.R.U.S. 119, Fayette Co. from Conn Welding & Machine Co., 108 Croton Ave., New Castle, **$52,753.** CD 7/7.

Washington—State Hy. Dpt., Olympia, July 22, construct 4 rein.-con. bridges 0.073 mi. S. S. H. No. 2-F, Odair to Electric City Bridges, Grant Co., from N. F. Lampson, Coulee City, **$135,481*****rein.-con. slab bridge and steel girder and rein.-con. continuous girder bridge 0.115 mi. S. S. H. No. 1-Y, Stillagaumish and Davis Bridges, F. A. S. No. S-0356 (2), Island and Snohomish Counties, from Manson Constr. Co., 821 Alaskan Way, Seattle, **$348,178*****rein. con. continuous girder Similkameen River Bridge 0.069 mi. P. S.H. No. 10, E. R. P. No. ER-8 (1), Unit 2, Okanogan Co., from Roy L. Blair & Co., 1220 Ide St., Spokane, **$162,234.** No bids received July 22, straightening steel members and repairing trusses on Wenatchee River Bridge, P. S. H. No. 15, Chelan Co. CD 7/8.

Wisconsin—State Hy. Dpt., Madison, July 19, structure B-17-2, The Wheeler Colfax Co., Red Cedar River Bridge, 0.044 mi. S.T. Hy. 170, from Station 5 plus 76/83 to Station 0 plus 93.17, Contr. 1, Dunn Co., from Eau

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Claire Engineering Co.,* Eau Claire, **$60,022;** structure B-16-76, The Bluff 2 and 53 Proj. SN-GAGM 08-5 (32) (on) Creek Separation City of Superior U. S. Hys. Contr. 1, Douglas Co., from L. G. Arnold, Inc., Eau Claire, **$96,716.** CD 7/5.

CONTRACTS AWARDED

Calif., Oakland—Alameda Co., Courthouse, rein.-con. bridge and hy. imprv., Marsh and Lowry Rds., Washington Twp., to R. C. Lewis Constr. Co., 1815 Telegraph Ave., Oakland, **$105,185.** Bids 7/18, awarded 7/18. CD 7/7.

Calif., San Diego—Bd. Supervs., San Diego Co., Civic Center Bldg., rein.-con. girder bridge on County Rd. HC 13-1, to Northrup Constr. Co., 1904 E. 4 St., Long Beach, **$164,586.** Bids 7/11, awarded 7/18. CD 6/28.

Ill., Danville—Vermillion Co. Bd. Superv., Court House, Danville, concrete girder bridge, Sidell, to Contracting Constr. Co., 17½ Walnut St., **$76,908.** Thomas E. Wetzler, 1019 Linden St., Wilmette, engr., Awarded 7/18. CD 10/11/44.

Iowa—State Hy. Dpt., Ames, July 19, bridge, F 464 (3), Adair Co., from Cunningham Reis Co., 421 Liberty Bldg., Des Moines, **$52,980***,** bridge, S-1203 (3), Group 1, Chicasaw Co., from Kehe Constr. Co., Waverly, **$52,385***,** bridge, S 1291 (2), Clay Co., from Graves Bros., Melvin, **$84,149*****bridge, S 233 (3), Howard Co., from C. B. & M. R. Taylor, Decorah, **$57,588.** CD 7/8.

STREETS AND ROADS

BIDS ASKED

August 12

†Oregon—U. S. Eng., 628 Pittock Block, Portland, Zone 5, surf. ¾ mi. County Road No. 360, incl. logging, clearing, grubbing, roadway grading, roadway surf. and constructing all drainage structures and channel changes, from Lowell, Lane Co., eastward to railroad crossing, Inv. No. CIVENG-35-026-50-32.

August 15

Calif., San Leandro—City, City Hall, resurf. of streets, over $50,000. Plans deposit $5. Charles Martin, City Hall, city engr.

August 16

Calif., Los Angeles—Bd. Supervs., Los Angeles Co., 501 Hall of Records, imprv. 11,275 ft. Freeman Blvd., Imperial Hy. to Manchester Ave., Inglewood, over $50,000. C. E. Arnold, co. engr.

British Columbia — minister P. Wks., Province of British Columbia, Parliament Bldgs., Victoria, 5 mi. Prince Rupert Galloway Rapids Sect., Northern Trans Provincial Hy. Plans deposit $10. H. C. Anderson, ch. engr. CD 3/1/43.

LOW BIDDERS

Calif., Oakland—City, City Hall, imprv. Park Blvd. and portions of intersecting streets between Greenwood Ave. and El Centro Ave., from Gallagher & Burk, 900 73 Ave., Oakland, **$175,768.**

Calif., San Diego—City, Civic Center Bldg., July 19, imprv. Chalcedony St. and other streets, from Griffith Co., Box G, Hillside Station, San Diego, **$152,809,** est. $182,196.

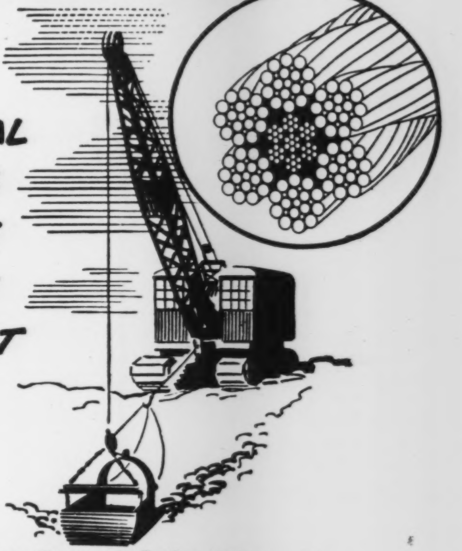
Idaho—State Hy. Dpt., Boise, construct roadbed, drainage structures, bit. surf. 1.861 mi. and bit. tr. 6.101 mi. Coeur d'Alene-Yellowstone trail, Shoshone Co. from McAtee and Heathe, E. 3527 Trent St., Spokane, Wash., **$184,716.** Est. $163,847.

Illinois—State Hy. Dpt., Springfield, July 15, bit. resurf. 6.37 mi. Rt. 3 from Marys River about 1½ mi. southeast of Chester southeast to Rockwood and c. conc. patching from Chester southeast to Marys River, Randolph Co., from Charles G. Gilmore Asphalt Products, Anna. **$253,136.**

Ill., Chicago—City, Dpt. Purchases, Contracts & Supplies, City Hall, July 20, paving 103 St., from S. Racine Ave. to S. Halsted St., from Calumet Coal Co., 9540 S. Marquette St., **$135,875.**

Iowa—State Hy. Dpt., Ames, July 19, from C. H. Atkinson Paving Co., Chillicothe, Mo., paving 7.642 mi. F 781 (6), Appanoose Co., **$394,648*****from Ralph Green and W. L. Groesbeck, 312 Masonic Temple Bldg., Des Moines, paving 0.898 mi. F 965 (1), Harrison Co., **$151,345;** grading 6.051 mi. F 464 (3), Adair Co., **$132,472*****from Fred Carlson Co., Decorah, paving 9.897 mi. F 764 (5), **$454,903** and 2.98 mi. F 764 (5), **$132,365,** both Jasper Co; paving 3.88 mi. F 791 (3), Marshall Co., **$183,254;** c. conc. 10.815 mi. F 278 (2), Benton Co., **$589,439** ***from Booth & Olson Inc., 519 Insurance Exchange Bldg., Sioux City, paving 1.328 mi. F 442 (6), **$66,292,** 7.843 mi. F 767 (2), **$315,912,** both Mills Co.***from Quad City Constr. Co., Rock Island, Ill., paving 0.616 mi. U 71 (4), Washington Co., **$109,245*****from Fielding & Shepley Inc., 1258 Bohn Ave., St. Paul, Minn., c. conc. 9.994 mi. F 233 (2), Benton Co., **$495,578*****from Cameron, Joyce Co., Keokuk, b. conc. 9.017 mi. F 351 (4), Humboldt and Wright Counties, **$224,299*****from Erlin P. Schweitzer, Osborn, Kan., grading 8.848 mi. SN 1314 Harrison Co., **$54,670*****from Johnston Constr. Co., 239 W. Center St., Milwaukee, Wis., grading 3.88 mi. F 791 (3), Marshall Co., **$54,238*****from Nichols & Schroeder Inc., Charlotte, surf. 9.247

SOME ROPES FOOL YOU



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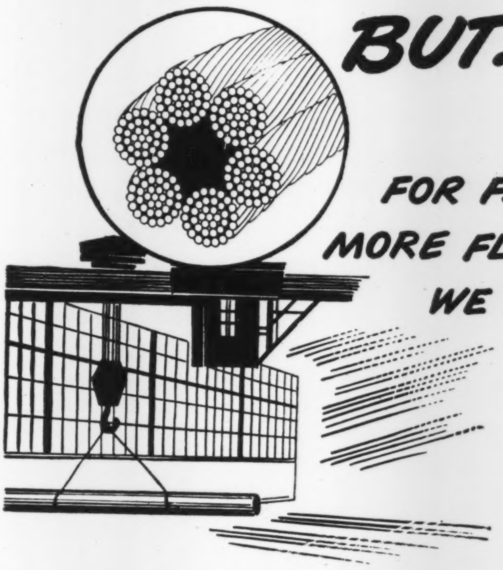

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mi. S 1301 (1), Jackson Co., **$51,841*****from Concrete Materials Constr. Co., 405 Granby Bldg., Cedar Rapids, surf. 22.5 mi. FM 95, Keokuk Co., **$69,615*****from Kaser Constr. Co., 219 5 St. West Des Moines, surf. 46.5 mi. FM 132, Div. 1, Washington Co., **$65,153.** CD 7/14.

Maryland—State Hy. Dpt., Baltimore, July 19, b. conc. 214 mi. old Phila. Rd., State Rt. 1, city line to Golden Ring Rd. and along Belair Rd., U. S. Rt. 1, city line to Overlea Ave., Contr. B. 594-415, Baltimore Co., from Harry T. Campbell Sons Corp., Towson, **$86,798;** concrete shoulders 4.633 mi. U. S. R5. 15 beginning at intersection State Rt. 28, exten. northwesterly to point of Rocks, F 502-615, Frederick Co., from Thomas, Bennett & Hunter, Inc., Westminster, **$148,539.** CD 7/13.

Nevada—State Hy. Dpt., Heroes Memorial Bldg., Carson City, July 21, 0.696 mi. highway through Verdi, Washoe Co. from Silver State Constr Co., S. Main St., Fallon, **$149,388.** CD 7/7.

N. D., Grand Forks—State Bd. Higher Educ., Bismarck, July 15, c. conc. paving and drainage at University of North Dakota from Swingen Constr. Co., 213½ N. 4 St., **$76,446.** Lium & Burdick, 316 Cambridge St., engrs.

●**Pennsylvania**—Pennsylvania Turnpike Comn., 11 N. 4 St., Harrisburg, July 22, grading, drainage, structures, paving 4.74 mi. Turnpike Sect. 28B-1, Tredyffrin, East Whiteland and Charlestown Twps. Chester Co. and grading, drainage, structures, paving 2.99 m. Sect. 28B-2, Tredyffrin Typ., Chester and Montgomery Counties from L. G. DeFelice & Son, Inc., Nettleton Ave., North Haven, Conn., **$1,689,418.** CD 6/24.

●**Pennsylvania**—State Hy. Dpt., Harrisburg, July 22, bit. surf. incl. construct rein-con. box, rein.-con. bridge 23,990 ft. Route 10056 (R-1). T.R. 308, between Butler and West Sunbury, Butler Co. from Mid-State Constr. Inc., P. O. Box 262, Punxsutawney, **$380,963*****bit. surf., crushed aggregate base, incl. one rein.-con. structure and one metal plate pipe structures and bit. surf. railroad crossing 25,043 ft. L.R. 46, Sec. 6; 05050 Ext. T.R. 26 from near Everett Boro, North, Bedford Co. from E. D. Plummer & Sons, Chambersburg, **$372,725*****bit. resurf. 40, 42, and 46 ft. wide, 31,668 ft. T.R. U. S. 30 from McKeesport Boro-North Versailles Twp. line southeasterly to Crest then from Fairmount to the Irwin Interchange on Pennsylvania Turnpike, L.R. 120, Sec. 20, Allegheny and Westmoreland Counties from Harrison Constr. Co., 1101 Western Ave., Pittsburgh, Zone 12, **$490,049*****crushed stone base course wid'n., replacing center lane with crushed stone base course, bit. surf. new base and existing pavement, construct rein.-con. box and crushed stone base course with bit. surf. 37,219 ft. L.R. 142 (23); 274 (2). T.R. U. S. 30 from Lancaster Chester Co. line to point near Coatesville, Chester Co. from Berlanti Constr. Co., 15 Oakland Ave., Harrison, N. Y., **$802,924*****c. conc. wid'n. and bit. surf. new and existing pavement, wid'n. base, bit. surf. 34,997 ft. L.R. 8594-R; 86 (3-R); (4-R); 87 (4R); 88 (7R); 406 (2R); 25040 (1-R). T.R. 6 N; 5; 20; 8. Erie Co. from Charles H. Fry Constr. Co. 1902 Cherry St., Erie, **$227,681*****bit. surf. 38,043 ft. L.R. 333 (4), T.R. U. S. 111 from Newberrytown south toward North York Boro, York Co. from Stewart & March, Inc., 1049 N. Hartley St., York, **$225,589*****c conc. paving, incl. one rein-con. structure, bit. surf. crushed aggregate base; two I-beam and one rein.-con. bridge 32,973 ft. L.R. 95 (8). T.R. U. S. 6 from near Clarendon Boro south to near village of Sheffield also from near village of Sheffield to near Roystone, Warren Co. from S. J. Groves & Sons Co., 53 Messenger St., Johnstown **$771,824*****c. conc. incl. 4 rein-con. structure one I-beam bridge, bit. surf. crushed aggregate base, 28,793 ft. L.R 229 (2C); 194 (6A). T.R. U. S. 11 and U. S. 15 between Selinsgrove and Port Trevorton, Snyder Co. from Hempt Bros. R.D. 1, Camp Hill, **$1,385,488*****bit. resurf. 14,794 ft. L.R. 116 (S-3). T.R. U. S. 119 from point southwest of City of Uniontown, southwesterly, Fayette Co. from C. S. Yoder, 4 Wine St., Uniontown, **$106,386.** CD 7/7.

Texas—State Hy. Comn., Austin, July 19, grading and structures 7.599 mi. Hy. 294, F. 903 (3) (4) and (5), Lavaca, De Witt and Victoria Counties from George B. Adams, Bryan, **$104,817.** Est. $117,000. CD 7/12.

Texas—State Hy. Comn., Austin, July 20, from Austin Contrg. Co., P. O. Box 1590, Dallas, flexible base, asph. stabil. base, single asph. surf. tr. 8.129 mi. Hy. 24, Denton and Collin Counties, **$310,699.** Est. $270,000***from Austin Road Co., P. O. Box 1590, Dallas, c. conc. and grade separations 4.56 mi. U. S. Hy 75, FI 466 (17), Galveston Co., **$922,760.** Est. $445,000***from T. C. Cage, 607 Travis Bldg., San Antonio and Dean Skinner, P. O. Box 4057, Austin, flexible base, hot mix-cold laid b conc. 4.279 mi. Hy. 123, F 537 (12), Hays Co., **$145,093.** Est. $157,000***from Dailey & Holifield, Transit Tower, San Antonio, flexible base, single asph. surf. tr. 15 mi. Hy. 16, S. 217 (3), Bexar Co., **$66,752.** Est $52,000***from The Jarbet Co., 812 Insurance Bldg., San Antonio, flexible base, single asph. surf. tr. 5.347 mi. Hy. FM 155, S. 1089 (4), Fayette Co., **$52,190.** Est. $51,000***from Worth Constr. Co., P. O. Box 531, Fort Worth, c. conc. wid'n 5.909 mi. Hy. U. S. 81, C 14-5-8, Hill Co., **$77,109.** Est. $70,000***from Menefee Bros., Center, flexible base, single asph. surf. tr. 6.552 mi. Hy. FM 317, Proj. S. 806 (1), Henderson Co. **$78,689.** Est. $65,000***from E. W. Hable & Sons, Corsicana, grading and structures 7.322 mi. Hy. 7, F 1092 (3) and (4), Falls and Limestone Counties, **$151,460.** Est. $160,000***from Thomas & Ratliff, Rogers, flexible base, single asph. surf. tr. 11.175 mi. Hy. FM 53 and FM 52, S. 114 (3) and S. 488 (2), Runnels Co., **$73,745.** Est. $68,000***from Fred Bell, 1526 South 7 St., Abilene, flexible base, double asph. surf. tr. 5.891 mi. Hy. 59, S. 648 (5) and S. 648 (4), Montague and Clay Counties, **$110,606.** Est. $115,000***from Ernest Loyd, P. O. Box 1120, Fort Worth, flexible base, single asph. surf. tr. 35.988 mi. Hy. FM 767, V. 1108-1-1, Hartley Co., **$391,358.** Est. $485,000; flexible base, single asph. surf. tr. 6.202 mi. Hy. FM 906, S. 1259 (1), Lamar Co., **$97,693.** Est. $62,000***grading and structures, C. R. I. and P. R.R. underpass 13.411 mi. Hy. U. S. 66, FI 547 (11) and FGI 547 (12), Wheeler Co., **$199,700.** Est. $300,000***flexible base, single asph. surf. tr. 8.067 mi. Hy. FM 158, Grimes Co., **$182,078.** Est. $183,000. CD 6/29. 7/8 and 7/12.

Tex., Griffing Park—(Port Arthur P. O.)—Town, via Port Arthur, July 19, sand, shell, flex. base, double asph. paving, from Stevens & Co., Inc., Whitney Bldg., New Orleans, La., **$334,838.** CD 6/28.

Washington—State Hy. Dpt., Olympia, July 22, non-skid seal and light bit. surf. tr. 59.6 mi. State Hys. 11-A, 3, 11 and 3K, Moxee to cold Creek, Asotin, Benton, Franklin and Yakima Counties, from Standard Asphalt Paving Co., Chronicle Bldg., Spokane, **$65,326*****Type I-1, b. conc. resurf. 7.295 mi P.S.H. No. 1, Newaukum River to Barnes Park and Kelson to Kalama, Lewis and Cowlitz Counties, from Pacific Sand and Gravel Co., Chehalis, **$108,422*****light bit. surf. tr. 6.435 mi. P.S.H. No. 22, Davenport North, F.A.S. No. S-0477 (2), Lincoln, Co., from Goetz & Brennan, Seaboard Bldg., Seattle, Zone 1, **$210,750*****b. conc. resurf. 1.856 mi. Primary State Hy. 1, south of Tacoma Way, Tacoma Co., from Asphalt Paving & Engineering Co., P. O. Box 106, Tacoma, **$66,167.** CD 7/8.

●**Wisconsin** — State Hy. Dpt., Madison, grading, draining, base course 2.983 mi. The C.T.H. P-East Co. line Rd., C.T. Hy. S. from Station 0 plus 10 to Station 157 plus 59.6 Proj. S-5037 (1), Contr. 1, Dodge Co., from Bossell Bros. Constr. Co., Inc., Shawano, **$68,439*****b.conc. 0.996 mi. S. Main St. in Lake Mills, S.T. Hy. 0.89 from Station 5 plus 77.8 to Station 58 plus 40 Proj. T-0443 (2), Contr. 1, Jefferson Co., from Rein-Schultz, 119 E. Washington Ave., Madison, **$69,610*****gravel or crushed stone base 12.188 mi. The Ellsworth-River Falls Rd., S.T. Hy. 35, from Station 0 plus 00 to Station 645 plus 99, Proj. F-028-2 (1), Contr. 1, Pierce Co., from Jenkins & Baumgardt, Montfort, **$89,771*****grading, draining, base course 6.975 mi. Osceola-St. Croix Falls Rd., S.T. Hy. 35, from Station 759 plus 50 to Station 1105 plus 00 Proj. F-028-3 (1), Contr. 1, Polk Co., from McLean-Astleford Co., 400 W. 78 St., Minneapolis, Minn., **$148,279*****grading, draining, base course 9.142 mi. The Pigeon Falls-Osseo Rd., U. S. Hy. 53, from Station 87 plus 50 to Station 560 plus 46, Proj. F-08-3 (2), Contr. 1, Trempealeau Co., from Fletcher Constr. Co., Menomonie, **$392,753*****c.conc. 1.82 mi. The Wales-Waukesha Rd., U. S. Hy. 18, Proj. T-016 (8), Contr. 1, both Waukesha Co., from Payne & Dolan of Wisconsin, Inc., 735 N. Water St., Milwaukee, **$69,875*****c.conc. 0.835 mi. Depere St. and Appleton Rd., Menasha, S.T. Hy. 47, from Station 0 plus 82 to Station 45 plus 70.7 Proj. T-09-1 (3), Contr. 1, Winnebago Co., from Kramp Constr. Co., 2775 S. 27 St., Milwaukee, **$726,729.** CD 7/5.

CONTRACTS AWARDED

Calif., Los Angeles—Bd. Supervs., Los Angeles Co., 501 Hall of Records, imprv. Peck Rd. Durfee Ave. to Garvey Ave., C.C. 0-645, to T. E. Sherlock, 1103 E. 40 Pl., Los Angeles, **$143,433.**

Calif., Los Angeles—Bd. Regents, University of California, 405 Hilgard Ave., grading, paving, curbs, electric utilities, to Frank T. Hickey, 1645 Allesandra, Los Angeles **$76,888.** Bids 6/7, awarded 6/24.

Calif., San Jose—Santa Clara Co., Courthouse, imprv. San Antonio Ave., to Browne & Krull, 1057 Cotter Way, Palo Alto, **$59,932.** Bids 7/18, awarded 7/18.

Ga., Atlanta — Fulton Co. and City of Atlanta, Atlanta, West Fulton By-Pass, to M. J. Carroll Contracting Co., Leesburg, **$623,150.** Bids 6/28, awarded 7/18. CD 7/6, under LB.

Idaho — State Hy. Dpt., Boise, gravel surf. and bit. tr. 14.959 mi. U. S. 191, Freemont Co. to Barnhart & Wheeler, Pocatello, **$78,873.** Est. $90,650. Awarded 6/17.

●**Illinois**—State Hy. Dpt., Springfield, c. conc. 10.14 mi. U. S. 40 Cumberland Co., to Standard Paving Co., 30 N. LaSalle St., Chicago, **$998,000;** b. conc. 20.48 mi. Ill. Rt. 159, St. Clair, Monroe and Randolph Counties, to Payne & Boland Inc., 20 N. Wacker Dr., Chicago, **$864,498.** Bids 7/15. Awarded 7/22. CD 7/19.

Ill., Grayville—City, Mrs. Lucille Rotramel, clk., City Hall, street imprvs., incl. earth excavation, grading, gravel or crushed stone base, curb and gutter, modified B-class A-1 bit. surf. tr. storm sewers and pipe culverts Sects. 5CS and 6CS to Frank A. Somers, Co. Inc., Urbana, 5CS **$75,274.** 6CS $64,547. Bids 6/20. CD 5/16.

Ia., Sioux City—Woodbury Co., Sioux City, maintenance work grav. surf. 500.23 mi. county roads, to Early Constr. Co., Early, **$128,460.** J. C. McLean, co. engr., Bids 7/18.

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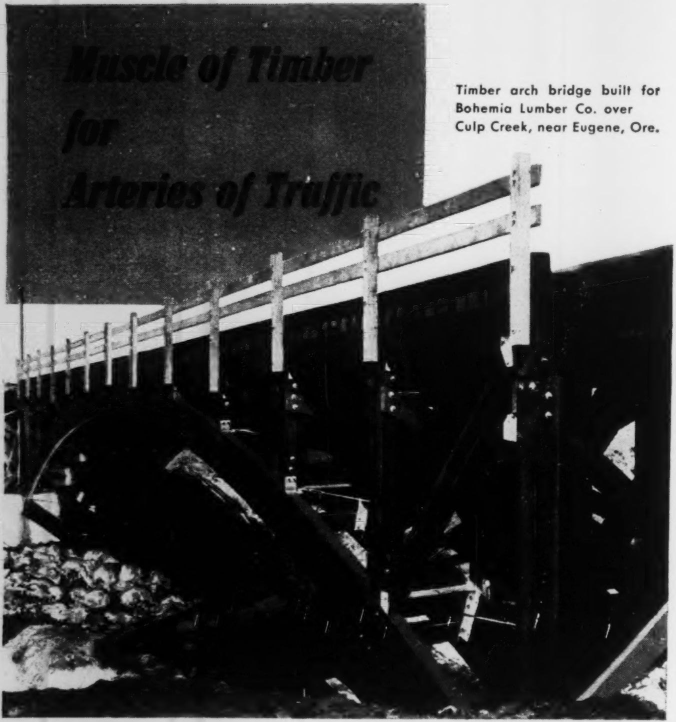

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La., Metairie—Jefferson Parish Police Jury, Gretna, paving 4 streets to Keller Constr. Corp., 7900 Palm St., New Orleans, **$60,500.** Bids 6/13. CD 6/21.

La., Shreveport—Caddo Parish School Bd., 501 Court House, roadways, parking areas, sidewalks, various schools to Netherton Co., Shreveport, **$67,977.** Bids 4/4. CD 3/23.

Minn., Wheaton — Traverse Co., c/o aud., Wheaton, grading 18.4 mi. S. P. 8402-04 (TH 9-152), S. P. 7801-02 (TH 9-152) and S. P. 2601-04 (TH 9-152), to J. Dieseth Co., Fergus Falls, **$105,833.** Bids 7/15. CD 6/30.

Missouri — State Hy. Dpt., Jefferson City, grading, c. conc. 0.355 mi. Rt. 275, Proj. 123 (3), road from Andrew Co. line to St. Joseph, Buchanan Co. to W. J. Menefee, Constr. Co., Sedalia, **$123,639.** Bids 6/24. CD 6/13.

Mo., Kansas City—Jackson Co., c/o purchasing agt., Court House, Kansas City, Mo., furnishing and applying 3,000,000 gal. road oil, various county roads, to Midwest Pre-Cote Co., 7600 E 17 St., Kansas City, Mo., **$267,900.** CD 11/10/47.

Neb., Omaha—City, City Hall, wid'n. Martha St. and paving added strip from 10 to 24 Sts. to Parks Constr. Co., 27 St. and Ed Creighton Ave., **$59,778.** Bids 7/19. CD 7/12.

New York—Bureau Contracts & Accounts, Albany, by-pass road carrying Route 63 to the west village of Genesee, Livingston Co. to Bero Engr. & Constr. Corp., McKinley Bldg., Buffalo, **$773,607.** Bids 6/22. CD 6/24, under LB.

New York—Bureau Contracts & Accounts, Albany, grading, drainage, gravel base course 1.38 mi. Ontario Thruway from Walden Ave. north to Beach Rd., Erie Co. to Main Constr. Corp., Depew, **$777,440.** Bids 6/22. CD 6/24, under LB.

O., Cleveland—City, City Hall, Lakeside and E. 6 Sts., b. conc. resurf. Payne Ave. from E. 12 St., to Horvitz Co., Midland Bldg., Cleveland, **$65,112**, est. $72,000. Awarded 7/14. J. C. Wenrich, City Hall, city engr.

Okla., Tulsa—City, Tulsa, widn. 21 St. between Utica and Lewis to F. M. Stowell, 5208 E. 15 St., Zone 5, **$126,371.** Est. $127,777. W. R. Wooten, city engr. Bids 7/22. Awarded 7/19.

Tex., Beaumont — City, City Hall, street constr. and storm sewers, Lynwood Terrace Addn. to Trotti & Thomson, Inc., 2940 Crockett St., **$75,201;** asph. paving 1½ mi. Jefferson Blvd., force-account. **$55,000.** R. C. Black, city engr. CD 2/11.

Tex., Dallas—Dallas Co. Courthouse, road reconstruction, surfacing, grading, Precinct 1, **$125,000;** Precinct 2, **$110,000;** Precinct 3, **$90,000,** force-account. Grand total $325,000. H. Klinger, county engr. CD 3/25/48.

Tex., Dallas—City, City Hall, Main and Harwood Sts., street paving Spring-Dolphon, Lagow to Haskell St. to Austin Road Co., 1000 Singleton Blvd., **$135,251.** CD 12/1.

Tex., Pasadena—Danham & Hayes, Pasadena, rein.-con. curbing and gutters, site grading, Approx. **$75,000;** c. conc. paving, Approx. **$90,000.** Own forces. A. D. Schmid, 3710 La Branch St., Houston, engr.

Washington—State Hy. Dpt., Olympia, surf. and stockpiling 4.3 mi. Secondary State Hy. 5-K, Lewis Co., to Strong & McDonald, Inc. 5045 Ruston Way, Tacoma, **$81,067.**

†Wash., Richland — U. S. Atomic Energy Comn., 1901 Constitution Ave. N.W., Wash., D. C., paving, earthwork, waterlines and sewer facilities to J. A. Terteling & Sons, Inc., 4011 Fairview Ave., Boise, Idaho, **$722,578.** CD 6/17, under LB.

Wisconsin—State Hy. Comn., Madison, grav. or crushed stone base course 7.424 mi. The Summit C. T. H. SS Rd., S. T. Hy. 30, from Station 261 plus 00 to Station 653 plus 00, Proj. FI-056 (1), Contr. 1, to John F. Bloomer Co., Appleton, **$532,205.** Bids 6/19. CD 7/25, under LB.

Alta., Edmonton — Municipality, Edmonton, paving of Connor's Rd., own forces, **$69,600.**

British Columbia—Province of British Columbia, Parliament Bldg., Victoria, 5.72 mi. Cathedral Grove-Alberni section Island Hy. to Campbell-Bennet Ltd., 1718 W. 5 Ave., Vancouver, **$643,583.** Awarded 7/21. CD 7/13, under LB.

B. C., Saanich—Saanich Municipality, Municipal Hall, Royal Oak, reconstruction and surf. 25 mi. roads, to Dawson, Wade & Co. Ltd., 775 Clark Dr., Vancouver **$207,561.** Awarded 7/18.

Que., Quebec City — Municipality, Quebec City, sidewalks, to Larae Construction Reg'd., 501 Sixth St., Quebec City, Approx. **$60,000.** Ed. Hamee, City Hall, engr.

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August 9

†Arkansas—U. S. Eng., 300 Broadway, Little Rock, emergency levee repair, Jackson County Levee Dist. No. 2, Black and White Rivers, White River Watershed, Serial No. CIVENG-03-050-50-6.

†Louisiana—U. S. Eng., foot Prytania St., New Orleans, approx. 1,650 lin. ft. pile dike and 1,500 lin. ft. triangular frame retards, right bank of Mississippi River, Morville, Serial No. Eng., 16-047-50-6.

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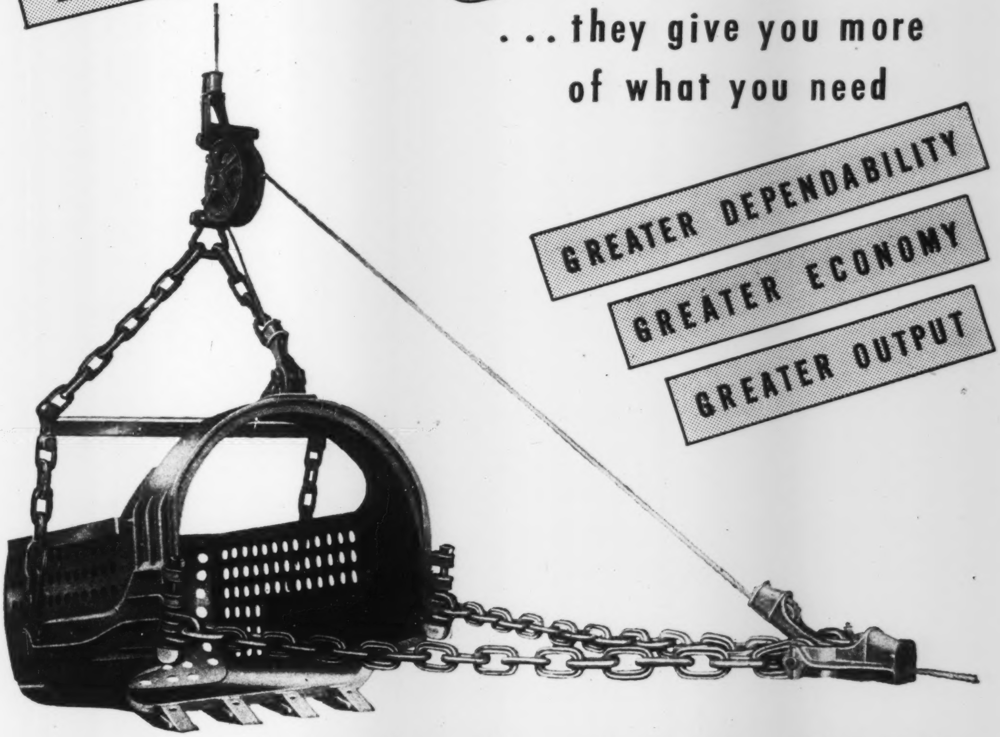

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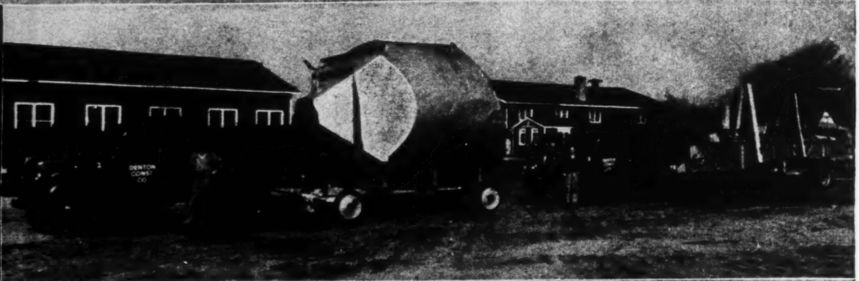

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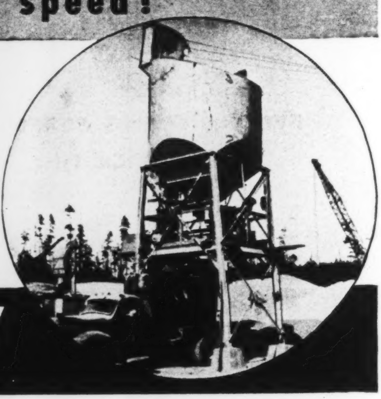

BUTLER BIN COMPANY
WAUKESHA, WISCONSIN

August 10

†Louisiana—U. S. Eng., foot Prytania St., New Orleans approx. 1,400 lin. ft. standard board revetment, Red River, Bossier City, Serial No. Eng., 16-047-50-7, Bossier Parish.

†Louisiana—U. S. Eng., foot Prytania St., New Orleans, approx. 520,000 cu. yds. hydraulic earthwork for enlargement, West Atchafalaya Basin Protection Levee, Serial No. Eng. 16-047-50-13, Iberia Parish.

La., Marksville—Avoyelles Parish Police Jury, Marksville, approx. 1,157,200 cu. yd. channel excavation clearing and grubbing approx. 3.44 acres.

Pennsylvania—Pennsylvania Turnpike Comn., 11 N. 4 St., Harrisburg,

Cumberland Co.—grading, drainage, structures, paving 4.355 mi. Sec. 21B-1 Philadelphia Extens. of the Turnpike from point approx. 512 ft. west if L.R. 507 in Silver Spring Twp. easterly for 22,994.18 ft. to point approx. 3,200 ft. east of L.R. 123.

grading, drainage, structures, paving 2.56 mi. Sec. 21B-2 Philadelphia Extens. of Turnpike from point approx. 3,200 ft. east of L.R. 123 in Upper Allen Twp. easterly for 13,520 ft. to point approx. 170 ft. west of the Yellow Breeches Creek in Lower Allen Twp.

Cumberland and York Counties—grading, drainage, structures, paving 2.826 mi. Sec. 22A-1, Philadelphia Extens. of the Turnpike from point approx. 170 ft. west of Yellow Breeches Creek in Lower Allen Twp., Cumberland Co. easterly for 14.926 ft. to a point approx. 155 ft. west of L.R. 250, Fairview Twp., York Co. Plans deposit $10 each. Capitol Engr. Co., Dillsburg, engr. CD 1/19.

B. C. Tofino—J. M. Somerville, secy., c/o Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., harbor repairs, imprvs., approach and floats, Armitage Point, Approx. $34,000 Plans deposit $10., R. Blais, c/o owners, engr.

N. S., Magaree—J. M. Somerville, secy., Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., breakwater extens., Approx. $61,000. Plans deposit $20. R. Blais., c/o owners, engrs.

Que., Petite River East—J. M. Somerville, secy., c/o Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., harbor imprvs. Approx $31,000. Plans deposit $10. R. Blais, c/o owners, engrs.

August 12

†Oregon—Bonneville Power Admin., 729 N.E. Oregon St., Portland, Zone 8, grading, Goshen substation site, 7 mi. south of Eugene, Lane Co. Inv. 4742. Plans deposit $5.

About August 13

†N. M., Albuquerque—U. S. Eng., P.O. Box 1538, Middle Rio Grande Conservancy Dist., emergency repair, Serial No. CIVENG 29-005-50-1. CD 6/23

About August 15

†Illinois—U. S. Eng., 826 U. S. Court House and Custom House, St. Louis, Zone 1. Mi., levee construction, along east bank Mississippi River, vicinity East St. Louis, Mississippi River mile 179.2 to 179.9 above mouth of Ohio River, East Side Levee and Sanitary Dist., St. Clair Co.

August 17

La., Houma—Terrebonne Parish Polish Jury, Houma, approx. 2,111,500 cu. yd. channel excavation.

August 19

†Colorado—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., earthwork, concrete lining tunnel and structures for Horsetooth Supply Conduit, Station 0 plus 00 to Station 53 plus 88.94, Horsetooth Feeder Canal, Station 53 plus 70.25 to Station 67 plus 52.1 and access road, Station 0 plus 00 to Station 14 plus 76.7, Colorado-Big Thompson Proj. Spec. 2746. L. N. McClellan, chn. engr.

LOW BIDDERS

Calif., Los Angeles — Bd. Supervs., Los Angeles, Co., 501 Hall of Records, July 5, constructing asphaltic lined channel in Saw Pit Wash., Monrovia, from Dimmitt & Taylor, 128 W. Pomona St., Monrovia, **$109,071.** CD 6/14.

●†Colorado—Bureau Reclamation, Dpt. Interior, Bldg 1-A, Denver Federal Center, Denver, rejected bids June 24, constr. earthwork, concrete lining, tunnel and structures for Horsetooth Supply Conduit, Station 0 plus 00 to Station 53 plus 88.94, Horsetooth Feeder Canal, Station 53 plus 70.25 to Station 67 plus 52.1 and access road, Station 0 plus 00 to Station 14 plus 76.7 Colorado-Big Thompson Proj., Spec. 2684, LB. **$1,383,400.** Will readvertise. CD 7/19.

†Missouri—U. S. Eng., 601 Davidson Bldg., 10 E. 17 St., Kansas City, Zone 8, Mo., July 21, approx. 13,250 lin. ft. pile dikes, revetment, dike repair and rock fill, Missouri River, Randolph Bend to Lexington Reach, approx. 347.5 mi. above mouth and approx. 3 mi. downstream from Missouri City, Serial No. Eng. 23-028-50-4, from W. A. Lynn Constr. Co., 1022 Trust Bldg., Lincoln, Neb., **$331,449.** Est. $324,439 CD 7/12.

†Missouri—U. S. Eng., 601 Davidson Bldg., Kansas City, Mo., July 19, approx. 9,060 lin. ft. pile dike and revetment, adjacent to Missouri River, at Grand River Bend at Boonville Reach, approx. 225.0 mi. above mouth

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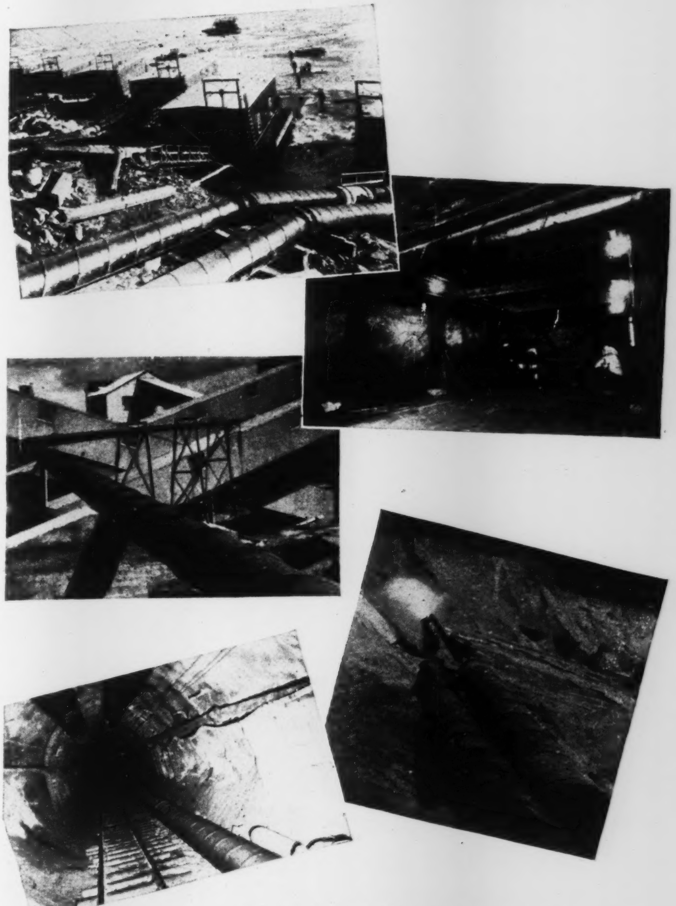

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and approx. 2 mi. downstream from Glasgow, Serial No. CIVENG 23-028-50-3 from Kansas City Bridge Co., 215 Pershing Rd., Kansas City, Mo., **$381,262.** Est. $359,661. CD 7/11.

N. J., Atlantic City—N. J State Dpt. Conservation, State House Annex, Trenton and City of Atlantic City, rejected bids June 27, 5 jetties, between St. Charles Pl. and Illinois Ave., L.B., **$528,755.** CD 7/19, under LB.

Pa., Douglassville—Penna. Dpt. Forests & Waters, Harrisburg, July 7, silt impounding basin from James D. Morrissey, 9119 Frankford Ave., **$113,284.** CD 6/21.

†Texas—U. S. Eng., 606 Santa Fe Bldg., Galveston, July 21, 2nd Contr., reservoir clearing, Dam "B" Inv. No. Eng. 41-243-49-347 from Volunteer Co., Knoxville, Tenn., **$216,000.** CD 6/22.

†Texas—U. S. Eng., 606 Santa Fe Bldg., Galveston, rejected bids June 23, construc two dredging ranges, Galveston Harbor Entrance, channel, Galveston Co. Eng-41-243-49-332. Will not re-advertise. CD 6/28, under LB.

CONTRACTS AWARDED

●†Arizona—Bureau Reclamation, Dpt. Interior, Yuma, earthwork, structures, Wellton-Mohawk Check and Turnout, Gila Gravity Main Canal, Station 790 plus 9017, earthwork, concrete, canal lining, structures, Wellton-Mohawk Canal, Station 1 plus 84.41 to Station 449 plus 00, Spec. 2688, to Fisher Contractin Co., S. 19 Ave., Phoenix, **$1,335,464.** Bids 6/28 awarded 7/22. CD 7/6, under LB.

†Arkansas and Mississippi—U. S. Eng., P.O Box 97, Memphis, 1, Tenn., placing appro 57,500 squares of 5 in. uncompacted asp pavement on pavement graded banks of Mississippi River between Memphis, Tenn., ar mouth of White River (Mile 583 AHP) Seria No. Eng-401-041-49-150, to Sam Finley, Inc. 292 North Ave., Atlanta, Ga., **$965,100.** Bid 6/28. CD 6/3.

†Illinois—U. S. Eng., 520 Merchandise Mar Chicago, Zone 54, riverfront levee, Coal Cree Drainage and Levee Dist., Schuyler Co., Serial No. Eng. 11-032-49-103, to S. W. Hardwick Beardstown, **$255,400.** Bids 6/21. CD 5/26.

●†Illinois—U. S. Eng., 520 Merchandise Mar Chicago 5, spillway, embankment, outl works, Farmdale Dam, Farm Creek Tazewe Co., approx. 4 mi. east of East Peoria, Seri No. Eng-110-32-49-98, to Acme Constr. Co. 5307 Grant St., Cleveland, O., **$1,319,258.** Bid 6/3. Awarded 6/13. CD 6/27, under LB.

†Illinois—U. S. Eng., 830 W. Broadwa Louisville, Ky., flood protection, Mounds an Mound City, Cache River Diversion. Unit 21 Serial No. Eng-15-029-49-141 to E. J. Albrech 2626 W. 26 St., Chicago, Ill., **$737,490.** Bid 7/14. CD 7/21.

†Louisiana—U. S. Eng., foot Prytania St. New Orleans 9, concrete structure, 2 gates 182,000 cu. yd. excavation, 3,655 cu. yd. concrete, 513,000 lbs. steel, sector gates Schooner Bayou Control Structure, Vermillion Parish Serial No. Eng-16-047-49-282, to Keller Constr Co., 7900 Palm St., New Orleans, **$670,575.** Est. $614,746. Bids 6/17. Awarded 6/27. CD 78, under LB.

†New Jersey—U. S. Eng., 121 N. Broad St. Phila. 1, Pa., reconstructing outer end o north jetty and dredging broken stone a Manasquan Inlet, Serial No. Eng-36-109-49-120 to Jesse A. Howland & Sons, Inc., 50 Church St., Seabright, **$58,129.** Bids 6/16, awarded 6/16. CD 6/10.

●New York—Bureau Contracts & Accounts Albany, twin steel guard gates at New York State Barge Canal, Herkimer, Herkimer Co., to Lake Constr. Co., Meriden, Conn., **$1,040,693.** Bids 6/1. CD 6/3, under LB.

†Pennsylvania—U. S. Eng., 925 New Federal Bldg., Pittsburgh, Zone 19, Latrobe Flood protection proj., Loyalhanna Creek, Latrobe Eng-136-058-49-137, to Latrobe Constr. Co., Latrobe, **$156,750.** Bids 6/21. CD 6/3.

●†Pennsylvania—U. S. Eng., 925 New Federal Bldg., Pittsburgh, Zone 19, embankment and spillway, East Branch Dam, Clarion River Eng-36-058-49-134, to The Hunkin-Conkey Constr. Co., and Shofner, Gordon & Hinman, 1740 E. 12 St., Cleveland, O., **$4,887,019.** Bids 6/23. CD 7/1, under LB.

Tex., Corsicana—Navarro County Soil Conservation Dist., Corsicana, soil conservation flood control, irrigation. Own forces. **$150,000** CD 7/15.

Tex., Ennis—Ellis County Soil Conservation Dist., Ennis, soil conservation and flood control, drainage, terracing, revetments, sodding Own forces. **$110,000.** CD 7/15.

Tex., Waxahachie—Navarro Soil Conservation Dist., Waxahachie, soil conservation flood control, ditching, drainage, revetment grading, terracings. Own forces. Approx **$90,000.**

Utah, Logan—City, H. R. Pederson, Rcdr Logan, furnishing, installing, 16,100 lin. ft 24 and 36 in. concrete pipe to convey irrigation water and 910 ft. 78 in. concrete pipe in connection with municipal hydro-electric plan to Utah Idaho Concrete Pipe Co., 925 South 6 West St., Salt Lake City, Approx. **$260,000;** 2 m. gal. rein.-con. reservoir to Ace Raymond, Logan, **$92,840.** Peterson, Bishop & Stock, Logan, engrs. Bids 7/11. CD 4/11.

●†Washington—Bureau Reclamation, Dpt. Interior, Coulee Dam, constr. earthwork, structures, station 1 plus 28 67 to station 965 plus 00, Winchester wasteway, Columbia Basin Proj. at West Canal about 8 mi. east o

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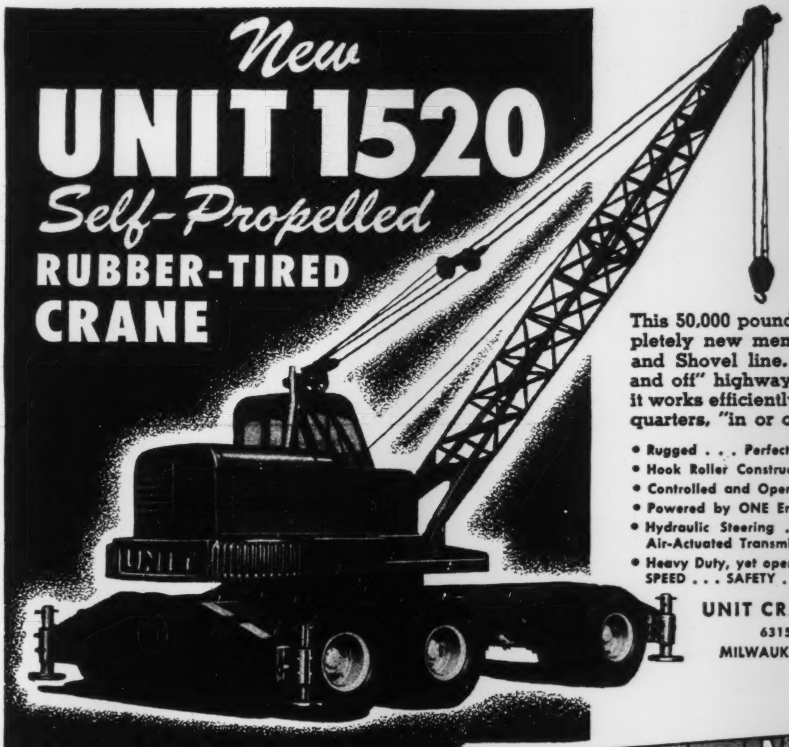

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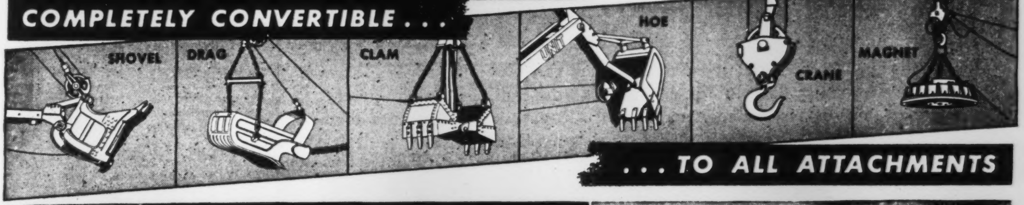

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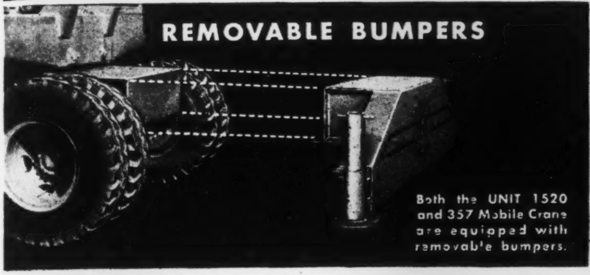

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2	25
3	50
4	75
5	100
6	125
7	150
8	175
9	200
10	250
11	300
12	350
13	400
14	450
15	500
16	550

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Quincy, extending in southeasterly direction from that point, Spec. 2648, to J. A. Terteling & Sons, Inc., 4011 Fairview Ave., Boise, Idaho, **$1,088,792.** Bids 5/26. CD 6/6, under LB.

Sask., Regina—Dominion Government, Dpt. Agriculture, Ottawa, Ont., Belly River diversion weir, to Remington Bros., Cardston, Alta., **$35,377.** G. L. MacKenzie, McCallum Hill Bldg., Regina, engrs.

AIRPORTS AND AIRBASES

BIDS ASKED

August 9

La., Marksville—AIRPORT IMPRVS.—Mayor, D. M. Riddle, Jr., Marksville, grading, seeding Marksville Municipal Airport, Plans deposit $10. CD 12/29/44.

August 17

Neb., Omaha — RADIO STATION, etc.—Civil Aeronautics Admin., City Hall, 414 E. 12 St., Kansas City, Mo., construct SRA low frequency radio station, dismantling existing radio station, incl. 5 steel towers, a building, fencing, driveway, underground cable, ground sys. at each tower, marker counterpoise, painting and electrical.

August 19

†Tex., Fort Worth—INSTRUMENT LANDING SYSTEM—U. S. Eng., 606 Santa Fe Bldg., Galveston, instrument landing sys., Carswell Air Force Base. Inv. No. Eng.-41-243-50-2.

LOW BIDDERS

†Miss., Biloxi—HOUSING—U. S. Eng., 2301 Grant St., Mobile, Ala., family type homes, incl. 60 houses, Keesler Air Force Base, from John A. Johnson & Co., 206 Rogers St. N. E., Atlanta, Ga., **$445,200.**

†S. C., Shaw Field (Sumter P.O.)—GROUND CONTROL APPROACH—U. S. Eng., Post Office Bldg., Savannah, Ga., cancelled bids to have been opened about June 21, ground control approach sys. facilities, Shaw Air Force Base. CD 6/8.

Tenn., Jackson—AIRPORT PAVING—State Bureau of Aeronautics, Berry Field, Nashville, July 14, airport paving from J. B. Michael & Co., 1021 Heywood St., Memphis, **$100,205.**

CONTRACTS AWARDED

†Calif., Point Mugu—RUNWAY, etc.—U. S. Naval Air Missile Test Center, Point Mugu, runway, taxiway and paved areas at U. S. Missile Test Center, Spec. 22687, to Griffiths Co., 1060 S. Broadway, Los Angeles, $998,700. Bids 6/28, awarded 7/6. CD 7/5, under LB.

†Pa., Coraopolis — HANGAR — U. S. Eng., First and Douglas Sts., Wash. 25, D. C., 1 story 148x160 ft. steel hangar with 2 story lean-to on 2 sides, Greater Pittsburgh Airport to Engstrom & Wynn, Inc., 1117 Chaplin St., Wheeling, W. Va., **$576,000.** Est. $600,000. CD 6/8.

†R. I., North Kingstown—RUNWAY—Construction Officer, First Naval Dist., Pub. Wks., Naval Air Station, Quonset Point, furnishing and applying bit. sealing materials 803,700 sq. yds. runways and taxiways, Naval Air Station to R. I. Sand & Gravel Constr. Co., Kilbert St., Warwick, **$59.035;** imprv. transportation sys. Naval Air Station to Plantations Constr. Co. Inc., 1089 Greenwich Ave. West Warwick, **$74,995.**

●†R. I., North Kingstown—SHOP—Construction Officer, Pub. Wks. Dpt., Naval Air Station, Quonset Point, 1 and 2 story 200x525 ft. glass and steel engine overhaul shop addn. to Ayers Hagen, Inc., Westminster St., Providence, **$1,759,071.** Charles A. Maguire & Assoc., 1018 Turks Head Bldg., Providence, archts. CD 12/1.

†Tex., Lubbock—REHABILITATION—U. S. Eng., P. O. Box 1538 Albuquerque, N. M., rehabilitation Air Force Base to E. E. Cloer, 2901 Avenue L, Fort Worth, **$107,819.** Awarded 7/20. CD 7/21.

†Alaska, Fairbanks — MESSHALL — U. S. Eng. (APO 942, c/o PM Seattle, Wash.) Anchorage, frame 500 man messhall at Eielson Air Force Base. Spec. S95-507-49-33 to Slater Constr. Co., Fairbanks, **$174,600.** Est. $185,541. Bids 7/21. CD 7/7.

Ont., Centralia—HOUSING—Central Mortgage & Housing Corp., 295 Fleet St. W., Toronto, 135 houses at airport, (D. N. D. Non Urban) Proj. 1/49, to Parker Constr. Co., Union, Approx. **$945,000.**

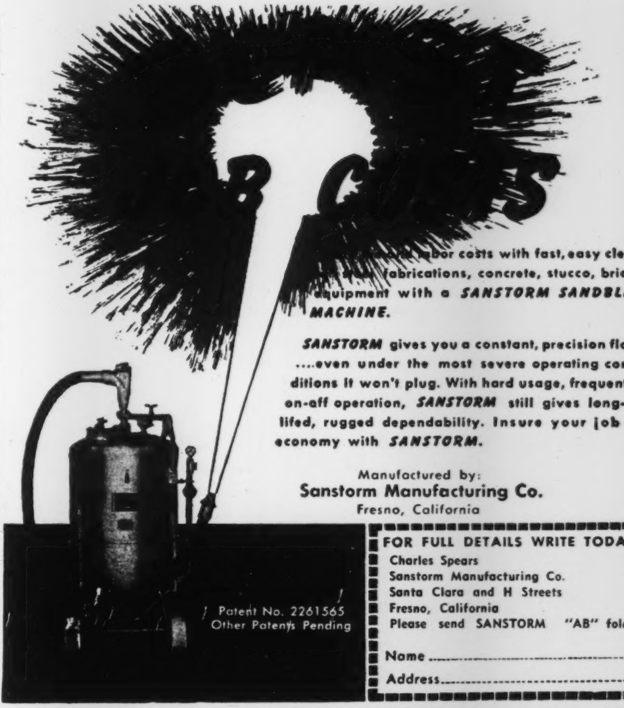
Ont., Clinton—HOUSING—Central Mortgage & Housing Corp., 295 Fleet St., Toronto, 95 houses, at airport (D. N. D. Non Urban) Proj. 1/49, to Parker Constr. Co., Union, Approx. **$665,000.** Bids 6/28. CD 6/14, under Public Bldgs.

PUBLIC BUILDINGS

BIDS ASKED

August 9

La., Coushatta and Hall Summit—SCHOOL ADDNS.—Red River Parish School Bd., Coushatta, brick classroom addn. Coushatta Grade School, Coushatta, band and music room addn. to Hall Summit High School, Hall Summit, Plans deposit $25. C. Scott Yeager, 211 Lee St., Alexandria, archt.



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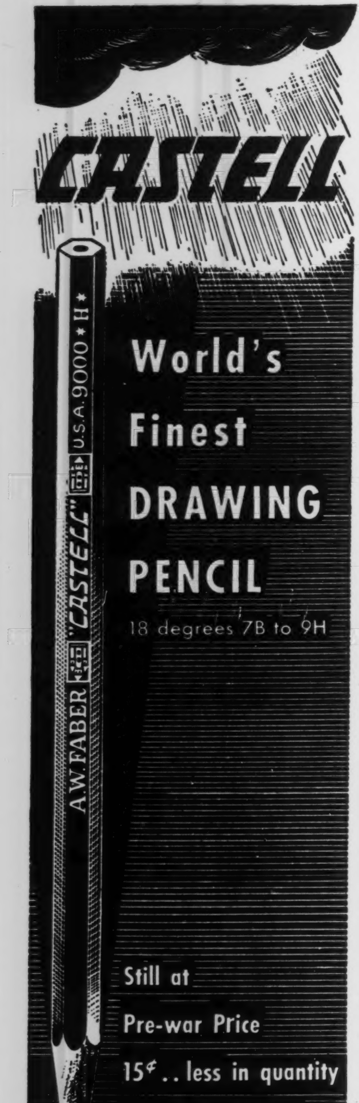

August 10

Pa., Warren—WOMENS' BLDG.—Dpt. Property & Supplies, 18 and Herr Sts., Harrisburg, general constr., heating and ventilating, plumbing and drainage, electrical and elevators of Womens' Bldg. Units A, B, and C at Warren State Hospital. $500,000. Plans deposit $15 general. $7.50 others. Prack & Prack, 119 Federal St., Pittsburgh, archts., W. B. Jefferis, c/o owner, engr. CD 1/26.

B. C., Rossland—SCHOOL—secy., c/o School Dist. 11, 1145 Cedar Ave., Trail, 2 and 3 story rein.-con. junior senior high school. Approx. $900,000. Plans deposit $50. Sharp & Thompson, Berwick, Pratt, 1553 Robson St., Vancouver, archts.

●B. C., Vancouver—CHRONIC UNIT—L. N. Hickernell, dir., Vancouver General Hospital, 10 and Heather Sts., 4 and 5 story T-shaped rein.-con. chronic unit of hospital. Approx. $1,000,000. Plans deposit $50. Townley & Matheson, 1376 Hornby St., Vancouver, archts. CD 8/29/47.

August 11

Ind., Marion—SCHOOL—Bd. School Trustees, Marion, Franklin Elementary School, $350,000. McGuire & Shook, 1400-01 Fletcher Trust Bldg., Indianapolis, archts. CD 6/30.

†Washington — EXCITER SET — Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., motor-generator exciter set for Units L-1 to L-6, Grand Coulee power Plant, Columbia Basin Proj., Spec. 2712. Extended date. CD 6/21.

August 12

N. Y., Flushing—GARAGE—Bd. Transportation, 250 Hudson St., New York, Zone 13, plumbing Contr. No. MW-101-4; heating and ventilating, Contr. No. MIW-101-6 for Flushing Bus Garage between 123 and 126 Sts. east of Roosevelt Ave.

●O., Cincinnati—HOSPITAL—Hamilton Co. Bldg. Comn., Courthouse, county hospital (county home). $4,331,000. Samuel Hannaford & Sons, 1024 Dixie Terminal Bldg., Frederick Garber, Union Central Bldg., archts., Wm. E. Bodenstein & W. F. Schuster, 2nd Natl. Bank Bldg., 9 and Main Sts., engrs. CD 8/22/45.

August 15

Ia., Waterloo—SCHOOL—Bd. Educ., Independent School Dist., Waterloo, brick, concrete elementary school, Dowing St. Approx. $300.00. Dave Toenjes, Waterloo, archt. CD 7/11.

August 16

†Arizona-Nevada — SUBSTATION — Bureau Reclamation, Dpt. Interior, Aviola Bldg., P. O. Box 392, Phoenix, 34,500 volt Yuma substation at Yuma, on lots 18, 19 and 20 on 11 Ave., south of 10 St., Davis Dam Proj., Spec. 2739. L. N. Mc Clellan, ch. engr., Bldg. 1-A, Denver Federal Center, Denver, Colo.

Mass., Taunton — GENERATING FACILITIES—Taunton Municipal Lighting Dpt., C. A. Oliver, mgr., Taunton, generating facilities, incl. 7,500 kilo steam turbine, connecting generator and exciter cap, 12,500 KVA Volate, 13,800 and 10,000 sq. ft. surface condensers and auxiliaries.

N. Y., Brooklyn—HOUSING IMPRVS.—New York City Housing Auth., 63 Park Row, Zone 7, topsoil and planting for Nostrand Houses (Proj. NYC-11) in area bounded by Avenue X, Batchelder St., Avenue V and Bragg St. Brooklyn Boro. Plans deposit $25.

Wash., Medical Lake—WARD BLDG.—State Dpt. P. Institutions, Olympia, completing senile ward bldg. at Eastern Lake Hospital, $500,000. Plans deposit $50. Funk, Molander & Johnson, S. 7 Wall St., Spokane, archts. CD 2/25/48.

August 17

Delaware — TROOP STATION — State Hy. Dpt., Dover, troop station No. 2, Delaware State Police, Du Pont Parkway and State Road, New Castle Co., Contr. 1059.

Pa., Hazelton—NURSES HOME—Dpt. Property & Supplies, 18 and Herr Sts., Harrisburg, general contr., heating and ventilating, plumbing and drainage, electrical for nurses home addn. at Hazelton State Hospital. $327,000. Plans deposit $10 general. $5 each, others. CD 2/25.

August 18

†Neb., Omaha—BUILDING IMPRVS.—U. S. Eng., 1709 Jackson St., alterations, plumbing, heating, ventilating, Govt. owned bldg. at 18 and Howard St. CD 7/25 under LB.

August 24

Minn., South St. Paul—SCHOOL—Bd. Educ., C J. Swedberg, clk., City Hall, grade school addn., $250,000. Plans deposit $15. Toltz, King & Day, 1509 Pioneer Bldg., St. Paul, archts., CD 3/31.

P. E. I., Summerside—BOILER PLANT—Canadian Commercial Corp., 70 Lyon St., Ottawa, Ont., high pressure steam boiler plant, Plans deposit $25. R. C. A. F. Hunter Bldg., Ottawa, Ont., engrs.

LOW BIDDERS

Calif., El Cantro—CITY HALL, etc.—City, City Hall, July 7, 22,000 sq. ft. rein.-con. city hall and police facilities, from Finan Constr. Co., 124 W. 4 St., Los Angeles, **$380,544.** Est. $400,000. CD 6/14.

Calif., Fullerton—CLASSROOM BLDG.—Fullerton Union High School Dist., July 20, two 2 story classroom bldg., at Fullerton High School, from G. Iannini, 2701 Spulveda Blvd., Manhattan Beach, **$454,309,** est. $440,000. CD 7/5.

Calif., Monrovia—AUDITORIUM, etc.—Monrovia City School Dist., 122 Linwood Ave., July 19, 2 story, 96x153 ft. reni.-con. auditorium and cafeteria bldg., from Theisen Co., 358 Del Monte St., Pasadena, **$282,670,** est. over $250,000. CD 7/6.

Calif., Montebello — AUDITORIUM—Montebello Unified School Dist., 123 S. Montebello Blvd., July 6, 1500 seat rein.-con. senior high school auditorium, 2100 Cleveland St., from G. Iannini, 2701 Sepulveda Blvd., Manhattan Beach, **$407,686,** est. $350,000. CD 6/22.

Calif., Oakland—GYMNASIUM—Bd. Educ., 1025 2 Ave., July 19, 2 story, 20,000 sq. ft. rein.-con. Bret Harte Jr. High School gymnasium bldg., from John E. Branagh, 105 Sheridan Ave., Piedmont, **$277,700.** CD 6/30.

Calif., Ontario—HOMEMAKING BLDG.—Bd. Trustees, Chaffey Union High School, Ontario, July 1, 2 story, 30,000 sq. ft. rein.-con. homemaking bldg., auditorium, classrooms, laboratories, from Stover Bros., 665 E. Foothill Blvd., Claremont, **$253,588,** est $250,000.

Calif., San Jose—GYMNASIUM ADDN.—State Div. Architecture, P. Wks. Bldg., Sacramento, July 19, general contract, 1 story, rein.-con. womens gymnasium addn., incl. 24,000 sq. ft. swimming pool, at San Jose State College, from O. E. Anderson, 398 Menker Ave., San Jose, **$253,575.** CD 6/27.

●Calif., Soledad—PRISON—State Div. Architecture, P. Wks. Bldg., Sacramento, July 19, general contract, 434,000 sq. ft. rein.-con. Medium Security Prison, from M & K Corp., 405 Montgomery St., San Francisco, Fredrickson & Watson Constr. Co., 873 81 Ave., Oakland and Piombo Constr. Co., 1571 Turk St., San Francisco, **$4,488,000*****electric work, from Collins Electric Co., Box 879, Stockton, **$358,333*****plumbing and heating, from Kenneth Fraser Co., Inc., 707 S. Arroyo Parkway, Pasadena, **$451,451** and **$635,035** respectively. CD 6/27.

Calif., Yountville—BARRACKS—State Div. Architecture, P. Wks. Bldg., Sacramento, July 19, general contract 2 story, bsmnt., 30,000 sq. ft. rein.-con. barracks at Veterans Home, from John E. Branagh, 105 Sheridan Ave., Piedmont, **$324,700.** CD 6/27.

Conn., Naugatuck — HOUSING — Naugatuck Housing Authority, Town Hall, July 15, Housing Proj. MR-15, Naugawan Village, between Rubber Ave. and Melbourne St., from Johnson-Frizzell Co., 210 E. 40 St., New York, N. Y., **$389,324.** CD 7/6.

Ill., Mount Carmel—HOSPITAL—Wabash Co., c/o county comrs., Court House, July 19. general contract 3 story, 125x136 ft. T-shaped brick, stone, steel, and concrete county hospital, from Snyder Constr. Co., Inc., 1900 Chestnut St., Vincennes, Ind., **$425,190.** CD 7/12.

Ia., Traer—LIGHT AND POWER PLANT—City, Bd. Trustees, City Hall, general contract, substructure and superstructure work for light and power plant imprvs. wrecking bldg., structural steel and cooling tower fdn. from Jens Olesen & Sons Constr. Co., Waterloo, **$117,711.** Bids 6/1. CD 5/19.

La., Baton Rouge — GYMNASIUM AND AUDITORIUM—East Baton Rouge Parish. Courthouse Bldg., Baton Rouge, rejected bids July 13, Goodwood Auditorium and Gymnasium bldg., and Southdowns Auditorium, Gymnasium and Cafeteria, CD 6/30.

Md., Bel Air—SCHOOL—Bd. Educ., Harford Co., Bel Air, 1 and 2 story brick, steel, concrete, consolidated colored school from The Frantz Constr. Co., 10 W. Chase St., Baltimore, **$649,950.** CD 6/16.

†Mississippi—CONCESSION BLDGS.—U. S. Eng., P. O. Box 60 Vicksburg, rejected bids June 7, change house and boat rental concession bldgs., Lower Lake, Sardis Dam., Serial No. Eng., 22-052-49-197. Will readvertise. CD 5/16.

N. Y., Brooklyn—SCHOOL—Supt. School Buildings, Design & Construction, 49 Flatbush Ave. exten. Zone 1, July 20, general constr. for west wing addn. to P. S. 16, Wilson St. between Bedford and Lee Aves. from Joseph Weinstein, Inc., 66 Court St., Zone 2, **$487,700.** CD 7/11.

†Oregon—SHOP, WAREHOUSE, etc.—U. S. Eng., Pittock Block, Portland, Zone 5, July 19, motor repair shop, warehouse, pumping station, water storage tank, water and sewer sys., aerial electrical distr. sys., substation and sects. of access roads and parking areas in permanent housing area at Detroit Dam. Eng-35-026-49-600 from Minnis & Schilling, 3144 W. 11 St., Eugene, $138,734. Est. **$149,890.** CD 7/6.

Ore., Enterprise—HOSPITAL—Wallowa Co. Courthouse, July 20, 52x162 ft. and 44x132 ft., 31 bed concrete block hospital from E. Chuck Mardis, Walla Walla, Wash., **$252,364.** Est. $300,000. CD 7/1.

●Tex., Houston—DORMITORIES—University of Houston, 705 Fannin St., July 14, five masonry dormitories from R. F. Ball Constr. Co. Inc., 3200 W. Dallas St., **$2,133,127.** Est. $900,000***heating and air conditioning sys., plumbing from H. F. Watson Co., 4911 Stimson St., **$690,100.** Est. $750,000. CD 7/5.

Wis., Niagara — HIGH SCHOOL — Joint School Dist. No. 1, Niagara, July 15, general

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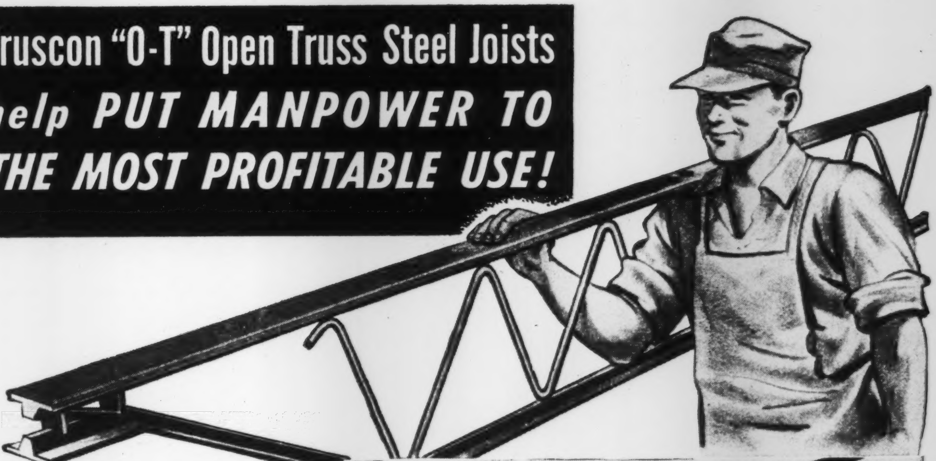

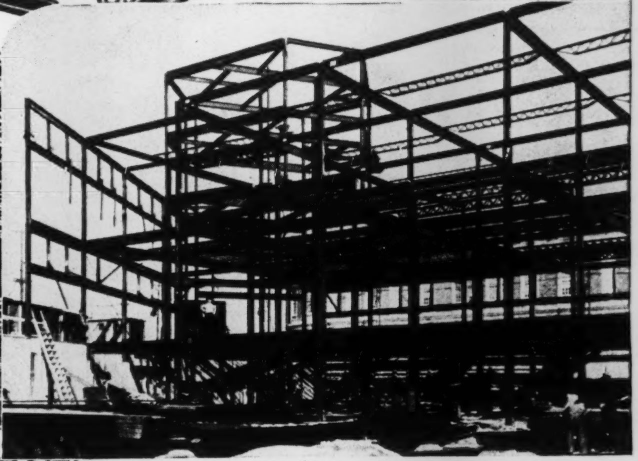

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contract 2 story, bsmnt., rein.-con. high school addn., from MacDonald & Kaake, Inc., 825 W. Washington St., Marquette, Mich., **$279,700.** CD 6/15.

B. C., Duncan—SCHOOL—Trustees School Dist. 65, P. O. Box 911, Duncan, 1 and 2 story, frame, stucco junior senior high school from Bennett & White Contr. Co. Ltd., 660 Howe St., Vancouver, **$589,827.** Hubert Savage, 616 Sayward Bldg., Victoria, archts., CD 10/16/46.

†Alaska, Bethel—POWER HOUSE—U. S. Eng. (APO 942, c/o PM, Seattle, Wash.). Anchorage, received no bids July 14, 20x20 ft. frame powerhouse on piling, Inv. 49-38. CD 7/5.

CONTRACTS AWARDED

Ill., Bellwood—JUNIOR HIGH SCHOOL—Cook Co. School Dist., 88, Bellwood, 2 and 1 story, brick, steel junior high school to Power Constr. Co., 212 S. Marion St., Oak Park, **$510,669.** CD 3/22, under LB

Ill., Joliet—SCHOOL—School Dist. 86, Ottawa St. 1 story, bsmnt., 66x200 ft. and 80x 160 ft. school and auditorium, to Mazzucco Constr. Co., 4 E. Clinton St., **$385,734.** J. E. Coyle, 315 Herkimer, archt. Awarded 7/14.

Kan., Manhattan—RESIDENT HALL—State of Kansas, Topeka, general contract womens resident hall, Kansas State College, to Huff Bros., Constr. Co., Fort Scott, **$565,513.** Bids 6/12. CD 7/19, under LB.

Ky., Independence—Denton Co. Bd. Educ., J. A. Caywood Independence, 2 story bsmnt., 121x157 ft. brick Bromley School; 2 story, bsmnt., brick Independence School, to Ferro Concrete Constr. Co., 203 W. 3 St., Cincinnati, O., Approx. **$579,472.** Awarded 7/7. CD 3/25.

†N. M., Albuquerque—HOUSING—U. S. Eng., P. O. Box 1538, 83 single type residences, 24 units efficiency apartments, AEC family Housing, Sandia Base. Serial No. 291-49-94, Stage IV to R. J. Daum Constr. Co., Albuquerque, **$818,624.** Bids 6/7. CD 6/17, under LB.

Pa., Ardmore—SCHOOL—Lower Merion Twp. School Dist., Ardmore, school, Penn Valley to Charles F. Rohleder, 600 Schuylkill Ave., Phila., **$939,731.** Bids 7/12. CD 6/30.

Pa., Baldwin Twp. (Pittsburgh P. O.)—SCHOOL—School Dist. Baldwin Twp., Clairton Rd., Pittsburgh, 2 story bsmnt, 75x400 ft. brick and block, steel beam, concrete slab Wallace Grade School to Ceasar Dechiccis, 639 3 St., Clairton, **$278,000.** Est. $400,000. Bids 5/17.

Pa., Sharon—SCHOOL—Bd. Educ., Sharon, 2 story 20x85 ft. high school addn. and gymnasium alterations to Johnson & Sizer, 369 S. Dock St. Approx. **$250,000.** The Thayer Co., New Castle, archt.

R. I., Kingstown—CHEMISTRY—State of Rhode Island, F. A. Adams, State House, Providence, 3 story bsmnt, 60x160 ft. L shaped, brick, steel and concrete, granite facing chemistry bldg., Rhode Island State College to Rowley Constr. Co., 260 Central Ave., Pawtucket, **$919,900.** Bids 6/10. CD 6/15. under LB.

Va., Arlington—SCHOOL—Bd. Educ., Arlington, Glencarlyn school Lee Blvd. and Carlyn Spring Rd. to M. Pomponio & Sons, 2228 Wilson Blvd., **$250,000.** Awarded 7/21. CD 10/14/48.

●Va., Hampton—SCHOOL—School Bd. Elizabeth City County, Hampton, George Wythe Junior High School to Virginia Engr. Co., Newport News, **$1,027,000.** Bids 6/29. CD 7/8, under LB.

●Wis., Madison—HOSPITAL ADDN.—University of Wisconsin, general hospital addn., to J. H. Findorff & Son, 601 W. Wilson St., Madison, **$2,424,000,** est. $2,000,000. Bids 6/21, awarded 7/15. CD 6/28, under LB.

B. C., Chilliwack—HOUSING—Central Mortgage & Housing Corp., 360 Homer St., Vancouver, 135 houses, to W. M. Orr, Chilliwack and Vancouver Associated Contractors Co., 815 W. Hastings St., Vancouver, **$850,000.** Bids 7/7. Awarded 6/18. CD 6/29.

B. C., Esquimalt—HOUSING—Central Mortgage & Housing Corp., 360 Homer St., Vancouver, 75 frame houses, to Victoria Housing Ltd., 735 Topaz Ave., Victoria, **$480,000.** J. L. Adams, 360 Homer St., Vancouver, engr., Awarded 7/22.

●B. C., Victoria—FEDERAL BLDG.—Federal Government, Hunter Bldg., Ottawa, Ont., 5 story, rein.-con. federal bldg., incl. post office, etc., to Northern Constr. Co. & J. W. Stewart Ltd., 736 Granville St., Vancouver, **$2,062,700.** Bids 6/15. Awarded 7/15. CD 6/29.

●Ont., Ajax (Pickering)—HOUSING—Central Mortgage & Housing Corp., 395 Fleet St. W., Toronto, 200 houses, Hy. 2-A, to Zellar Contracting, 955 Wyandotte St. W., Windsor. Approx. **$1,340,000.** A J. E. Smith, c/o owner engr., Bids 7/13. CD 7/5.

Ont., Brockville—SCHOOL—Bd. Educ., C. W. Seace, secy., Brockville, part 1 and 2 story, T-shaped 152 x 241 ft. steel frame, brick and tile walls 17 classroom and gymnasium Eastward Public School, concrete fdns., to M. Sullivan & Sons, Ltd., Arnprior, **$286,947.** Bids 7/21. CD 7/13.

●Ont., Camp Borden—HOUSING—Central Mortgage & Housing Corp., 395 Fleet St. W., Toronto, 10 houses, Proj. 2/49, 81 houses Proj. 3.49, Military Camp, (D. N. D. Non Urban), to Duncan McQuistan, 113 Perth St., Stratford, Approx. **$910,000:** 206 houses, Military Camp,

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(D. N. D. Non-Urban), Proj. 1/49. to R. F. Booth Constr. Ltd., 1986 Drummond Rd., Niagara Falls, Approx. **$1,380,000.** Grand total, $2,190,000. Bids 7/11. CD 6/24.

COMMERCIAL BUILDINGS

BIDS ASKED

August 10

Newfoundland, Gander—TELEPHONE AND TELEGRAPH BLDG.—B. Wheelwright, ch. engr., Canadian National Railways, 360 McGill St., Montreal, Que., telephone and telegraph bldg. Plans deposit $50.

August 11

Minn., Wheaton — HOSPITAL — Wheaton Community Hospital, R. C. Cole, secy., 3 story, 45x167 ft. hospital, $250,000. Plans deposit $25. Long & Thorshov, 400 Metropolitan Life Bldg., Minneapolis, archts. CD 3/8/48.

August 18

●**N. Y., Brooklyn**—HOSPITAL—Beth El Hospital, Inc., 422 Crown St., Zone 25, hospital addns. and alterations, $1,750,000. Isadore Rosenfield, 23 W. 47 St., New York, Zone 19, archt.

August 22

Va., Woodstock—HOSPITAL—Shenandoah County Memorial Hospital, Woodstock, 50 bed hospital. **$700,000.** CD 8/21/46.

Bids Asked

Conn., Putnam—TELEPHONE EXCHANGE—Southern New England Telephone Co., 227 Church St., New Haven, 1 story, brick, stone tnd concrete telephone exchange. $250,000. Carl Malmfeldt & Assoc., 36 Pearl St., Hartford, archts. CD 2/25.

●**Pa., Harrisburg**—OFFICE—William Lynch Murray & Assoc., archts., 1600 N. 2nd St., office for Commerce Corp., Dauhpin Bldg. **$1,000,000.**

Pa., Phila. — OFFICE — Peoples Bond & Mortgage Co., Packard Bldg., office, $250,000. I. Demchick, 246 S. 15 St., archt.

SOON LETS CONTRACT

Ia., Des Moines—HOSPITAL—Iowa Luthern Hospital, 712 Parnell St., soon lets contract hospital addn., $750,000. Wetherell & Harrison, Shops Bldg., archts.

Me., Waterville — DORMITORIES — Colby College, Waterville, soon lets contract, 2 dormitories. CD 1/16.

Miss., Natchez — EDUCATIONAL BLDG. — First Baptist Church, Natchez, soon lets contract 3 story educational bldg. addn. Plans deposit $25. L. L. Brasfield, Meridian, archt.

N. J., Westville—CHURCH—St. Anne's Roman Catholic Church, 308 Summit Ave., soon lets contract, church **$250,000.** Thomas Henry Moran, Hillcrest Estates, Princeton, archt.

Okla., Enid—AUDITORIUM—M. N. Wheeler, archt., Enid, soon lets contract, auditorium and education bldg. for University Place, Church of Christ, Enid, **$265,000.** CD 7/11.

●**S. C., Charleston**—APARTMENT—Sergeant Jasper, Inc., 90 Broad Ct., soon lets contract, 14 story concrete and steel apartment. **$2,500,000.** Bissett, Carlisle & Wolff, Columbia archts. E. Gaillard Dotterer, 12 Exchange St., engr.

S. C., Charleston—THEATER—Albert Sottile, Riveria Theater Bldg., soon lets contract, theater. A. E. Constantine, 129 Calhoun St., archt.

Que., Thetford Mines—CHURCH—J. B. Gagnon, archt., c/o Roman Catholic Parish of La Presentation, 326 Notre Dame St., soon lets contract, 66x225 ft. concrete brick church, $250,000. CD 3/13/46.

LOW BIDDERS

Calif., Los Angeles—EDUCATION BLDG.—Temple Israel of Hollywood, 7300 Hollywood Blvd., June 30, 3 story temple religious education bldg. and chapel wing, admin. offices from Zimmer Constr. Co., 1228 S. La Brea St., Los Angeles, **$329,615,** est. over $250,000. CD **6/9.**

Ind., Evansville—UNION BLDG.—Evansville College, Outer Lincoln Ave., July 12, general contract 3 story 129x136 ft. brick, stone, rein.-con. steel McCurdy Alumnae Memorial Union Bldg. addns., Lincoln and Rotherwood Aves., from Thorpe Constr. Co., Box 22, Evansville, **$409,240.** CD 6/23.

Tex., Fort Worth — CHURCH — Broadway Baptist Church, c/o Dr. Guy Moore, pastor, 305 W. Broadway, sanctuary on W. Broadway from A. J. Rife Constr. Co., 2608 Inwood St., Dallas, **$807,149.** CD 6/21.

Tex., Forth Worth—DIAL BLDG.—Southwestern Bell Telephone Co., 308 S. Akard St., Dallas, project cancelled, masonry, No. 8 dial bldg. addn, concrete slab fdn. **$250,000.** CD 7/11.

CONTRACTS AWARDED

Calif., Los Angeles — DWELLINGS — Manhattan Homes Co., 5173 Overland Ave., 85 five-room frame, stucco dwellings, to R. J. Blanco, 5173 Overland Ave., Culver City. Approx. **$400,000.**

Calif., Los Angeles—CHURCH—Santa Sophia Greek Orthodox Church, Normandie and Pico Blvds., 2400 sq. ft. structural steel, concrete church, to Contracting Engr. Ltd., 2310 W. Vernon Ave., **$450,000.** Walker, Kalionzes, Klingerman, 488 S. San Vicente Blvd., archts.

Calif., Oakland — RESIDENCES — C. H. Mc Entyre, 1404 Franklin St., 39 residences in San Lorenzo Dist. Owner builds. Approx. **$260,000.**

Calif., Whittier—DWELLINGS, etc.—D. E. Turner & Assoc., 506 E. Duarte Rd., Monrovia, 50 frame, stucco dwellings and garages, Eddystone, Blanding and Caryford Sts. Owner builds. **$292,500.** John N. Douglas, 1041 E. Guen St., Pasadena, archt.

Conn., Stamford — HOUSING — American Homes, Inc., c/o contractor, 17 bldg., 122 family units 2 story, bsmnt., brick, frame garden apartments, Sylvan Knoll Rd. and Seaside Ave., to Arthur Olson, Inc., Glenbrook Rd., Darien, **$902,550.** Marvin H. Clapp, 400 E. 49 St., New York, 17, N. Y., archt.

Ill., Chicago—SCHOOL—Catholic Bishop of Chicago, 719 N. Wabash St., Zone 11, 2 story, steel, concrete, brick school, 1401 W. Granville St., to Fallon, O'Donavan & Rassas, 4619 W. School St., Zone 41, **$250,000,** F. Stanton, 307 N. Michigan St., Zone 11, archt. Bids 5/16. Awarded 7/14. CD 5/12.

●**Kan., Concordia**—HOSPITAL—Sisters of St. Joseph, Concordia, hospital, to Walter Butler Constr. Co., 1300 Minnesota Bldg., St. Paul, Minn., **$1,200,000.** CD 11/2/45.

Md., Baltimore — DWELLINGS, etc. — The College Garden Corp., 502 Yale Ave., fifty-one, 2 story, masonry dwellings, 4201-38 Parkton St., 4303-65 Parkton St. and ten 2 story masonry apartment incl. 96 families, to The Delwood Co., 502 Yale Ave., Baltimore, **$371,000** and **$400,000** respectively.

Mass., South Hadley—PHYSICAL EDUCATION—Bd. Trustees, Mt. Holyoke College, physical education bldg. to George B. H. Macomber Co., 19 Milk St., Boston, **$630,000.** CD 3/31/44.

Minn., Minneapolis—APARTMENTS—Remington Park Bldg. Co., M. W. Pierce, pres., 5513 Kellogg Ave., St. Louis Park, and Uptown Apartments Bldg. Co., c/o P. E. Crosier & Son, archts., 2441 Lyndale Ave. S., Minneapolis, general contract two 19 unit apartments, 43 St. and Uptown Ave. S., to Sauers Constr. Co., 1550 W. Larpenteur Ave., St. Paul. Approx. **$320,000.** CD 5/27.

Mo., Kansas City—APARTMENTS—Westport Building Co., 1002 Walnut St., twelve 2 story, brick, frame apartments, W. 39 St., W. 40 St. and Pennsylvania Ave. Owner builds. Approx. **$250,000.** Herb Duncan, Victor Bldg., archt.

●**N. J., Elizabeth**—APARTMENT—775 North Broad Corp., c/o Erwin Gerber, archt., 1180 Raymond Blvd., Newark, 5 story apartment at 775 N. Broad St. corner of North Ave. Owner builds, **$1,000,000.**

O., Cleveland — HOMES — A. L. Webber Builder, 2423 Overlook Rd., 75 one and half story, bsmnt., 4½ rooms and bath frame shingle homes, **$375,000;** 250 one story, bsmnt., 20x35 ft. 5 room and bath frame cottage type homes, **$700,000,** both separate contracts.

O., Shaker Heights—APARTMENT—Radiant Home Builders, 1145 Sunset Dr., Mayfield Heights, 28 suite apartment, separate contracts, **$400,000.** George Burrows, 1622 Lee Rd., Cleveland Heights, archt.

●**Pa., Abington** — APARTMENT DEVELOPMENT—Jenkintown Gardens, Inc., 5402 Lebanon Ave., Phila., Garden type apartment development, Washington Lane and Township Line Rd., separate contracts. **$5,500,000.** Herman Polss, 1701 Walnut St., Phila., archt.

Pa., Bristol — RESIDENTIAL DEVELOPMENT—Owner, c/o H. B. Eastburn, 118 Mill St., residential development, Winder Village to John Kitchener, Bailey Rd. and Hilton Ave., Oakford, **$250,000.**

Pa., Morrisville — RESIDENTIAL DEVELOPMENT—Penn Valley Constr. Co., Morrisville, residential development, Hillcrest and Barnsley Aves., separate contracts. **$250,000.** W. H. Roberts, 20 N. Penna. Ave., archt.

Pa., Phila. — RESIDENTIAL DEVELOPMENT—Magee Constr. Co., 850 Longshore Ave., residential development, Dorcas St., etc., separate contracts. **$250,000.**

Pa., Phila. — RESIDENTIAL DEVELOPMENT — Smelo-Peters-Milgram, Inc., 739 Disston St., residential development, Bustleton Ave., separate contracts. **$250,000.** N. T. Montgomery, 2nd St. pike, Huntingdon Calley, archt.

Tex., Houston — DWELLINGS — Townsend Constr. Co., 511 Taggart St., 60 dwellings, Peaceful Valley sub-division. Owner builds. Approx. **$500,000.** CD 7/25.

Tex., New Braunfels — HOUSING — Alfred Herry, New Braunfels, housing proj. between Fred. Rd. and New York Ave. Owner builds. **$275,000.** CD 12/27.

Tex., Pasadena—DUPLEXES—Charles R. Olds & Assoc., 3425 University St., Houston, 125 addnl. duplexes, on 395 acre tract. Own forces. **$575,000.** CD 4/8.

Tex., San Antonio—DWELLINGS—Thurman Barrett, 804 Villaret St., addnl. 100 dwelling proj. in Patten Heights. Owner builds. **$400,000.** CD 7/21.

Tex., San Antonio—HOUSING—Richard Gill Co., Gunter Bldg., housing proj. on Sutton Dr. etc., to West & Kaulbach, Gunter Bldg., **$290,000.** CD 7/21.

Tex., San Antonio — HOUSING — H. J. Shearer & Co., 6600 San Pedro St., addnl. housing proj. portion of Shearer Hills. Owner builds. Approx. **$285,000.** CD 7/21.

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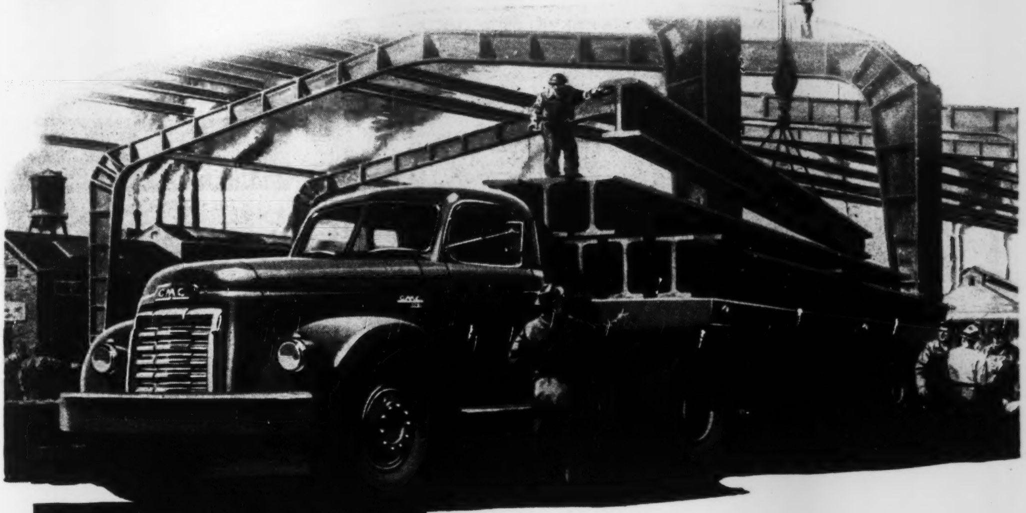

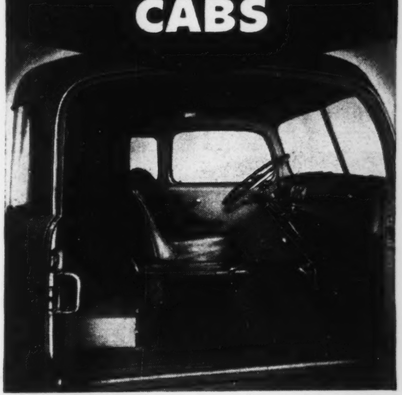

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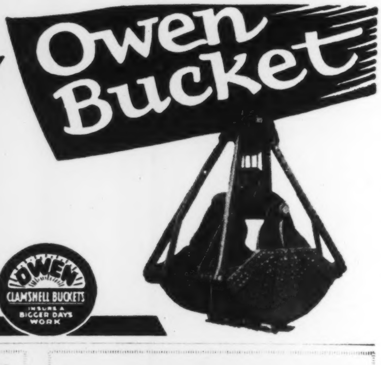

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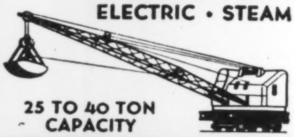

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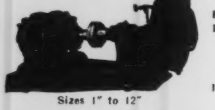

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●**Tex., Wichita Falls**—DWELLINGS—R. G. Hughes, Pampa, 400 dwellings. Own forces. Approx. **$2,200,000.** CD 7/15.

Wash., Walla Walla—APARTMENT HOUSE—Brentwood Apartments, Inc., Walla Walla, 3 story brick, concrete apartment house, to Peabody & Co., N. 44 and Stone Way Sts., Seattle, Zone 3, Approx. **$250,000.** B. J. Ovey, c/o contractor, archt.

Wis., Kenosha—SCHOOL, etc.—St. Marks Catholic Congregation, 7114 14 Ave., 2 story, bsmnt., 128x142 ft. parochial school and rectory-garage addn., to J. Peter Larsen, 6906 Sheridan Rd., Kenosha, **$325,000.** CD 6/15.

Ont., Eastview (Ottawa) — RETREAT HOUSE—Franciscan Sisters, Quebec City, Que., retreat house, Presland Rd., Overbrook Area, to Ed Brunet & Sons, 41 Tracy St., Hull, Que. Approx. **$300,000.** J. S. LeFort, 18 Rideau St., Ottawa, archt.

●**Que., Lennoxville** — RESIDENCES, etc. — Bishops University Lennoxville, 4 story, 135x150 ft. mens residence; 35x90 ft. womens residence; 1 story 65x120 ft. gymnasium; 1 story 40x60 ft. boiler house to R. E. Stewart Constr. Corp., 268 Wellington St., Sherbrooke, Approx. **$1,000,000.** Est. $1,245,000. Fetherstonhaugh, Durnford, Bolton & Chadwick, 660 St. Catherine St. W., Montreal, archts. CD 2/3/48.

●**Que., Montreal**—HOUSING—Clouthier and St Laurent, 4001 Maplewood Ave., one hundred forty 2 story, bsmnt., 30x42 ft. concrete, brick houses, De Lapeltrie St., Owner builds, **$1,000,000.** J. E. Perron, 5362 Louis Collin Ave. archt.

INDUSTRIAL BUILDINGS

BIDS ASKED

August 8

B. C., Vancouver—FACTORY—McCarter & Nairne, archts., 1930 Marine Bldg., 1 story, 314x350 ft. steel factory and office, for British Ropes Canadian Factory Ltd., Granville Island, Vancouver, CD 6/30.

Ont., Toronto—Proctor, Redfern & White, 229 Yonge St., engrs., 1 story, 300x300 ft. brick, steel, concrete plant and office, for Kendall Co. of Canada, 419 Coxwell Ave., D. F. Kent, gen. mgr., Approx. $400,000. Horwood & White, 229 Yonge St., Toronto, archts., CD 12/10.

August 11

Ont., Toronto—FACTORY—N. A. Armstrong, archt., 19 Melinda St., 2 story, 64x154 ft., structural steel, steel frame, rein.-con., factory and office on Bathwest St. south of King St. W., Approx. for Electric Chain Co. of Canada, Ltd., 171 John St., Approx. **$165,000.** CD 4/21.

Bids Asked

Pa., Bristol—DISTILLERY—Hunter-Wilson Distilling Co. Inc., Green Lane, Bristol, distillery addn. Approx. $68,000.

Pa., Devon—WAREHOUSE—Samuel Cohen, 104 N. Comac St., Phila., warehouse. Approx. $68,000. Henry S. Berg, 1411 Walnut St., Phila., archt.

Pa., Oaks—PLANT—B. F. Goodrich Co., Oaks, plant alterations. $70,000.

SOON LETS CONTRACT

Del., North Claymont—PLANT ADDN—General Chemical Co., 40 Rectro St., New York, N. Y., soon lets contract plant addn., over **$68,000,** Edwards & Green, Broadway and Carmen Sts., Camden, N. J., archts.

Ill., Chicago—PLANT—Hearst Publishing Co., 8 Ave. and 57 St., New York, N. Y., soon lets contract, 2 story brick newspaper plant and office, Lockwood Greene Engrs., Inc., Rockefeller Plaza, New York, N. Y., engrs and archts.

Ia., Des Moines—WAREHOUSE—Winston & Newell Co., 300 6 Ave. North, Minneapolis, Minn., soon lets contract, 1 story, grocery warehouse, Delaware Ave. and Washington St., **$500,000.** Brooks & Borg, Hubbell Bldg., Des Moines, and F. A. Constable, San Francisco, Calif., consult archts. CD 7/14.

Neb., Lincoln—BUS GARAGE—National City Lines, 616 S. Michigan St., Chicago, Ill., soon lets contract, bus garage. **$75,000.** Davis & Wilson, 225 Stuart Bldg., archts.

O., Cleveland—WAREHOUSE, etc.—Lake Erie Co-operative Grocery 5515 Hough Ave., soon lets contract, 1 story, 150x160 ft. steel, brick warehouse and office, concrete floor at W. 159 St. and N.Y.C.R.R., $225,000. Plans deposit $15. Bonfield & Cummings, 1900 Euclid Ave., Cleveland, archts. CD 8/16/46.

O., Cleveland—BAKERY—National Biscuit Corp., 449 W. 14 St., New York, N. Y., soon lets contract 1 story, steel frame bakery incl. office, warehouse and baking facilities, concrete floor. $750,000. Roy Wofford, 715 Carnegie Ave., company archt. CD 9/29/48.

●**O., Cleveland** — WAREHOUSE, etc. — Texas Co., Box 5268, Indianapolis, Ind., soon lets contract 1 story 220 x 220 ft. warehouse, 1 story 50x70 ft. repair garage; 1 story 27x62 ft. load-

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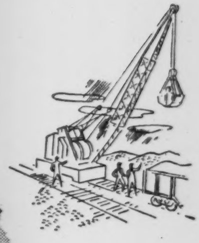

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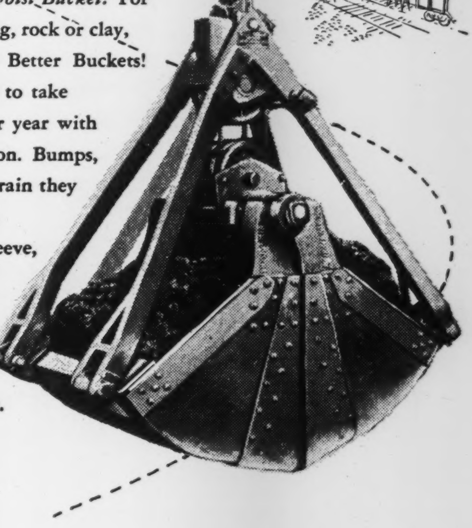

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ing platform and office, all steel frame, metal floor $1,000,000. Plans deposit $25. CD 6/22.

Pa., Warren—WAREHOUSE—New Process Co., 220 Hickory St., soon lets contract, 3 story bsmnt., 40x68 ft., 1 story 62x109 ft., 2nd story addn. L shaped 40x40 ft. brick warehouse and office addn. and alterations. $300,000. Duane Lyman & Assoc., 505 Delaware Ave., Buffalo, archts.

S. C., Gaffney—BOTTLING PLANT—Coca-Cola Bottling Co., Gaffney, soon lets contract, bottling plant. Hudson & Chapman, Spartanburg, archts. CD 7/18.

Tex., Midland—PLANT, SHOP—Pittsburgh Plate Glass Co., c/o T. Jackson, 2nd unit of Santa Fe Bldg., Dallas, soon lets contract, plant and shop. **$150,000.** Walter W. Ahlschlager, 212 S. St. Paul St., Dallas, archt. CD 4/6.

Tex., Tyler—AUTO PARKING—Fair Foundation, c/o R. W. Fair, trustee, soon lets contract Tyler 2½ story ultimately 5 story concrete pier and beam fdn., 120x140 ft. masonry, concrete steel auto parking. $250,000. S. W. Ray, Jacksonville, engr. CD 6/28.

W. Va., Treadelphia — MACHINE SHOP, WAREHOUSE, OFFICE—Valley Camp Coal Co., Western Reserve Bldg., Cleveland, O., soon lets contract, 1 story 60x140 ft. machine shop, 1 story 80x110 ft. warehouse, 1 and 2 story 139x180 ft. irregular shape office, brick and steel constr. $300,000. Dalton, Dalton & Assoc., 979 Arcade Bldg., Cleveland, O., archts.

CONTRACTS AWARDED

Calif., Pasadena—LABORATORY ADDN.—California Institute of Technology, 1201 E. California Ave., 3 story, 50x136 ft. rein.-con. engineering laboratory addn., to Ray Gerhart, 334 S. Greenwood Ave., Pasadena. Approx. **$450,000.**

Ill., Chicago—SUB STATION—Commonwealth Edison Co., 72 W. Adams St., Zone 3, brick, concrete, sub station, 4343 W. Grand St., to Paschen Contractors Inc., 2738 Elston St., Zone 47, **$68,000.** T. G. Thomas, 72 W. Adams St., Zone 3 archt., Awarded 7/11.

Ill., Chicago—PLANT—Great Lakes Spring Co., 7035 W. 65 St., Zone 38, brick, steel, concrete plant addn., in Clearing Industrial Dist., to Clearing Industrial District, 38 S. Dearborn St., Chicago, 3, **$245,000.** Awarded 7/11.

Ill., Chicago—BAKERY—Vienna Model Bakery Inc., 701 S. Halsted St., Zone 7, steel, brick, concrete bakery and garage, to Welso Constr. Co., 2345 S. Pulaski St., Chicago, Zone 23, **$230,000.** A. Epstein & Sons, Inc., 2011 W. Pershing St., Zone 9, engrs., Awarded 7/12.

Ill., Evanston—FACTORY—Clayton Mark & Co., 1900 Dempster St., 1 story, brick, steel factory addns., to The Austin Co., 510 N. Dearborn St., Chicago. Approx. **$225,000.**

Ind., Fort Wayne—SHIPPING ROOM—Perfection Biscuit Co., 250 Pearl St., Fort Wayne, general contract, 1 story, 90x120 ft. brick shipping room addn. to Max Irmscher & Sons., 1113 Ft. Wayne Bank, Fort Wayne, **A. M.** Strauss, 415 Cal-Wayne Bldg., archts.

La., New Orleans — GARAGE — Times Picayune Publishing Co., c/o contractor, vehicle garage, to E. B. Ludwig Constr. Co., 1350 Jefferson Highway, New Orleans, Approx. **$75,000.**

Minn., Elk River—GENERATING PLANT—Rural Co-operative Power Assn., Maple Lake, substructure power plant bldg. to Steenberg Constr. Co., W. 1628 First National Bank Bldg., St. Paul, **$528,400.** Bids 7/12. CD 7/19, under LB.

O., Cincinnati—WAREHOUSE—Al Kirschner Wrecking Co., 1217 Guest St., 1 story no bsmnt., 100x140 ft. brick warehouse, storage space and office to Penker Constr. Co., 1030 Summer St., **$72,000.** H. N. Hermann & Assoc., Enquirer Bldg., engr. and archt.

O., Norwood—GARAGE—Schmidlapp Motor Co., 3804 Montgomery Rd., 1 story concrete, brick, glazed tile garage and sales room, office, to J. & E. Worm Co., 2335 Florence Ave., Cincinnati, **$75,000.** Garriott, Becker & Beltman, 1204 Times Star Bldg., 8 and Broadway, Cincinnati, archts. Awarded 7/5.

Pa., Phila.—WAREHOUSE—M. E. Berman, 6032 Market St., 1 story, 79x129 ft. brick warehouse, separate contracts. Approx. **$68,000.** J. Ethan Fieldstein, 1325 Walnut St., archt.

Pa., Rankin — LOCKER ROOM — Bethlehem Steel Co., E. 3 St., Bethlehem, 1 story irregular shape, brick and steel locker room to The Trimble Co., 1719 Penna. Ave., Pittsburgh. Approx. **$75,000.**

Pa., Rankin — BUILDING — Carnegie Illinois Steel Corp., Carnegie Bldg., Pittsburgh, 1 story brick and tile sanitary and convenience bldg. to Crump, Inc., 4031 Bigelow Blvd., Pittsburgh. Approx. **$75,000.**

S. C., Mullins -- WAREHOUSE — McMillan Ginnery, c/o contractory, cotton warehouse to T. D. Epps Constr. Co., Kingstree, Approx. **$68,000.**

Tenn., Memphis—SALES, SERVICE—Hoehn Chevrolet Co., c/o Hanker & Heryer, archts., Commerce Title Bldg., auto sales and service bldg. addn. and alterations to H. F. Vann & Sons Constr. Co., 1089 Galloway St., Approx. **$75,000.** CD 1/10/47.

Tex., Baytown—LOCKER ROOM—Humble Oil & Refining Co., Baytown, 2 story, 1 story steel frame, brick locker room and workroom to Tellepsen Constr. Co., 1710 Telephone Rd., Houston, **$269,000.** CD 7/13.

Tex., Jourdanton—STORAGE, etc.—Humble Oil & Refining Co., Humble Bldg., Houston, storage facilities to Hudson Engr. Corp., 2711 Danville St., **$85,000;** natural gas pipeline gathering sys., **$110,000;** sewers and waterlines, **$80,000.** Own forces. Grand total, $275,000.

Tex., Port Lavaca—PLANT—Aluminum Co. of America, Commerce Bldg., Houston, 48x112 ft. paste control bldg., to O'Rourke Constr. Co., 4011 Koehler St., Houston. Approx. **$85,000.** Wyatt C. Hedrick, 5201 Fannin St., Houston, engrs. and archts. CD 5/20/48.

Tex., San Antonio—METAL WORKS EXPANS.—Dean Specialty Works, 907 Roosevelt St., metal specialty works expans. Own forces. **$75,000.**

Tex., San Marcos—PLANT—Green Valley Farms, San Marcos, food dehydration plant. Owner builds. **$175,000.** CD 7/25.

Tex., Taylor—COMPRESS ADDN.—Taylor Compress Co., Taylor, compress addn. to J. W. Perry, Insurance Bldg., San Antonio. Approx. **$75,000.**

Tex., Tomball—COMPRESSOR UNIT—Humble Oil & Refining Co., Humble Bldg., Houston, addnl. compressor unit at refinery to Fluor Corp. Ltd., M. Esperon Bldg., Houston, **$175,000.** CD 7/15.

Tex., Tomball — PLANT — Humble Oil & Refining Co., Humble Bldg., Houston, addnl. gasoline plant expans. Own forces. **$350,000;** addnl. gas gathering lines in Tom Ball Field to Humble Pipe Line Co., Humble Bldg., Houston, **$75,000.** CD 7/14.

Wash., Grandview—FREIGHT HOUSES, etc. —Northern Pacific Ry. Co., B. Blum, ch. engr., 176 E. 5 St., St. Paul, Minn., 1 story, 22x65 ft. freight house and office, with track changes, extens. and new team tracks, to L. S. Ross Constr. Co., Yakima, **$83,000.**

Wash., Vancouver—MILL—Aluminum Co. of America, Gulf Bldg., Pittsburgh, Pa., wire, rod and cable mill, to L. H. Hoffman Co., 715 S. W. Columbia, Portland, Ore. Approx. **$300,000.** Bids 7/12. CD 7/11.

Wis., Merrill—FACTORY—Anson Gilkey Co., Merrill, 1 story 72x140 ft. steel, concrete blocks, factory, concrete fdn. and floor, day labor. I. A. Obel, Wausau, archt.

Wis., Milwaukee—PLANT ADDN.—International Harvester Co., 1714 W. Bruce St., Zone 4, 1 story, 100x400 ft. steel, brick plant addn., concrete fdn., to Permanent Constr. Co., 4100 N. 3 St., Zone 12, Approx. **$175,000.**

UNCLASSIFIED

BIDS ASKED

August 9

Kansas—RURAL DISTRIBUTION LINES—Radient Electric Co-operative Inc., Howard L. Sell, mgr., Fredonia, 201 mi. rural distr. lines, sys. imprvs., Wilson Co., $325,000. Flora Engrg. Co., 501 Jackson St., Topeka, engrs., extended date. CD 5/20.

†Ohio — ELECTRIC LINES — U. S. Eng., Madison Ave. and 8 St. West., Huntington 18, W. Va., outside electric lines, Local Protection Proj., Portsmouth-New Boston. Serial No. CIVENG 46-022-50-16. CD 7/5.

August 10

Neb., Fremont—PARK—City, Fremont, development of Memorial Park, $180,000. Davis & Wilson, Stuart Bldg., Lincoln, archts., Grabe & Turner, Fremont, assoc. archts. CD 10/2/47.

†Pennsylvania — FILLING MINES — U. S. Eng., 925 New Federal Bldg., Pittsburgh, Zone 19, filling abandoned mines, station 1207 plus 50 to station 1222 plus 20, relocation of Pennsylvania R.R., Conemaugh Div., Serial No. CIVENG-36-058-50-5.

August 13

O., Campbell — SWIMMING POOL, etc. — John Grdic, Dir. P. Serv., Municipal Bldg., 50x80 ft. concrete swimming pool, wading pool, bath house and roadway, at Jackson St. and Murray Ave., Plans deposit $15. Theodore Dastoli, City Bldg., city engr.

August 17

Calif., San Francisco—PIER—State Div. Hys., P. Wks. Bldg., Sacramento, repairing Pier W-5 at San Francisco-Oakland Bay Bridge. G. T. McCoy, state hy engr.

August 18

†California—STRUCTURAL STEEL—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnish and del. f.o.b. cars at shipping point or f.o.b. cars at Herdlyn, Calif., fabricated structural steel for Tracy switchyard. Central Valley Proj., Spec. 2743. L. N. McClellan, ch. engr.

California—SIGNAL SYSTEMS—State Div. Hys., State Bldg., Los Angeles, traffic signal systems and hy. lighting at National Ave. and E St. in Chula Vista at National Ave. and 18 St., National City, San Diego Co. G. T. McCoy, P. Wks. Bldg., Sacramento, state hy. engr.

Nebraska—RURAL DISTRIBUTION LINES —North Central Nebraska Rural Pub. Power Dist., Creighton, 315.3 mi. rural distr. lines, Antelope, Knox ad Holt Counties. $325,000. Raymond H. Reed & Co., Columbus, engr. CD 4/28.

August 30

Ia., Osage — SWIMMING POOL — City, City Hall, swimming pool, bath house, water treatment plant, lighting, etc., $60,000. CD 11/26, under LB.

†Washington—SWITCH — Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnish. and del. f.o.b. cars at shipping point or f.o.b. at Odair, Wash., selector-type switch for Grand Coulee 230-kilovolt right switchyard, Columbia Basin Proj., Spec. 2742. L. N. McClellan, ch. engr.

SOON LETS CONTRACT

Minn., Elk River—WAREHOUSE—Rural Cooperative Power Assn., Milaca, soon lets contract 1 story, 80x120 ft. steel, concrete warehouse, and garage, ½ mi. south of here. $75,000. Plans deposit $15. Long & Thorshov, 400 Metropolitan Life Bldg., Minneapolis, archts. CD 7/11.

Missouri—RURAL DISTRIBUTION LINES —Webster Electric Corp., Marshfield, soon lets contract 88.58 mi. rural distr. lines, Dallas, Webster, Christian, Greene & Wright Counties, **$100,000.** Frank Horton & Co., Lamar, engr., CD 1/20/47.

North Dakota — RURAL DISTRIBUTION LINES—McLean Electric Co-operative, Garrison, soon lets contract, labor and materials, 398 mi. rural distr. lines, $385,000. Ulteig Eng. Corp., Fargo, engr. bids 6/30 rejected. LB $417,000. CD 7/14, under LB.

LOW BIDDERS

Kansas—RURAL DISTRIBUTION LINES—Kaw Valley Electric Co-operative, 1513 Lane St., Topeka, July 12, 165 mi. rural distr. lines, conversion 24.5 mi. from Turner Electric Co., Shawnee, Okla., **$214,221.** CD 7/6.

Missouri—RURAL DISTRIBUTION LINES —Three Rivers Electric Co-operative, Steve A Schauwecker, mgr., Linn, July 19, 181.25 mi. rural distr. lines, Miller, Cole, Osage, Gasconade and Franklin Counties, Sect G, from Griffin Electric Co., Ownesboro, Ky., **$308,012.** CD 7/13.

N. Y., New York—RADIANT HEATING SYSTEM—Comr. Sanitation, 125 Worth St., Zone 13, rejected bids July 18, radiant heating sys. for snow removal on 42 St. and following street intersections; Lexington, Vanderbilt, Madison and 5 Aves. and Avenue of the Americas, Broadway, 7 and 8 Aves. CD 7/13.

North Dakota — RURAL DISTRIBUTION LINES—Oliver Mercer Electric Co-operative, Hazen, rejected bids June 24, Sec. C-1, 313.2 mi. L.B. **$362,743*****Sec. C-2, 312.2 mi. L. B. **$330,697.** CD 7/7, under LB.

Pa., Phila. — ZOOLOGICAL GARDENS — Fairmount Park Comn., City Hall, July 13. Zoological Gardens, Carnivora House from Henry E. Baton, Inc., 1717 Sansom St., **$576,000.** CD 6/21.

Tex., Crystal City — STADIUM, GYMNASIUM — Crystal City Independent School Dist., cancelled bids to have been opened July 18, masonry and steel football stadium and gymnasium. **$90,000.** CD 7/6.

Tex., Stamford — STADIUM GYMNASIUM —Stanford Independent School Dist., Stamford, July 12, 3,500 seating capacity stadium-gymnasium from Rose Constr. Co., Abilene. **$168,432.** Jess G. Dixon, 913-B Indiana St., Wichita Falls, archt.

Wash., Seattle—DAM, etc.—City, County, City Bldg., construct bus and equipment foundations, equip. installation and incidental work, at Diablo dam and intake for Diablo switching station and power plant, from Utility Constr. Co., Puget Sound Bank Bldg., Tacoma, **$181,250.** E. R. Hoffman, City Light Bldg., city light supt.

CONTRACTS AWARDED

Ga., Savannah — DRIVE-IN THEATER — Dixie Drive-In Theaters, c/o Harris, Robinson, Savannah, drive-in theater. Owner builds, **$50,000.**

●Ill., Chicago—INTERIOR FINISHING—City, City Hall, L. A. Murray, purch. agt., interior finishing, W. Congress St., W. Lake St., N. Milwaukee Ave., W. Jackson St., and W. Washington St. subway stations, to M. H. Boyle & Co., 2480 N. Elston St., Chicago, 14, **$1,196,683.** CD 4/26/45.

Iowa—GAS PIPELINE—Iowa-Illinois Gas & Electric Co., Rock Island, Ill., 22 mi. gas pipeline from owners main line to Ottumwa and near points. Owner builds, **$60,000.** CD 11/26/47.

Iowa — RURAL DISTRIBUTION LINES — Clarke Electric Co-operative, Inc., Osceola, 154.4 mi. rural distr. lines, Clarke Co., to Stewart Inc., Anamosa, labor, $50,003, materials, $154,000. Total, **$204,003.** CD 8/27/48.

Iowa — RURAL DISTRIBUTION LINES — Nishnabotna Valley Rural Electric Co-operative, Harlan, 146 mi. rural distr. lines, to Evans Constr. Co., Early, **$197,502.** Bids 7/11. CD 6/23.

Iowa — RURAL DISTRIBUTION LINES — South East Iowa Electric Co-operative, Assn., Mt. Pleasant, 259.5 mi. rural distr. lines, Henry Co., to Hoak Constr. Co., 621 63 St. Des Moines, Labor $34,903, materials, $260,000. Total, **$344,903.** Stanley Engrg. Co., Hershey Bldg., Muscatine, engrs.

●Minnesota—RURAL DISTRIBUTION LINES —Rural Co-operative Power Assn., Maple Lake, furnish and construct 244 mi. rural distr. project, Minn. 70 Hennepin, Hennepin Co., to Hallett Constr. Co., Crosby, **$1,064,359.** Bids 4/13. CD 1/26.

†Ohio—PIER—U. S. Eng., Engineer Park, Buffalo 7, N. Y., repairing west pier, Huron Harbor Eng-30-023-49-71, to The L. A. Wells Constr. Co., 1121 Schofield Bldg., Cleveland, **$81,068.** Bids 6/24.

Oklahoma—RURAL DISTRIBUTION LINES —Peoples Electric Co-operative, Ada, 340.19 mi. rural distr. lines, Pontotoc Co. to Crews & Ward Constr. Co., Columbia, Miss., labor. $114,573, materials, $340,000. Total **$454,572.** Archer & Handley, P. O. Box 449, Ada, engr. CD 10/22.

Oregon—TROUT HATCHERY—State Game Comn., 1634 S. W. Adler St., Portland, imprv. Rock Creek trout hatchery, construct 93 ft. long concrete dam, intake box, pipelines, nursery and brook ponds and assistant's dwelling, Douglas Co., to E. C. Hall & Co., 12012 S. W. Barbur St., Portland, **$93,570.** Est. $95,000. Bids 7/22. CD 7/11.

†Oregon — PARKING AREA — U. S. Eng., Pittock Block, Portland, Zone 5, parking area on Bradford Island incl. sidewalks, drainage sys., portion of water distr. sys. passing through area and surf. adjacent roads; construct residential street in western sect. of Bonneville Dam reservation, Eng-35-026-49-597, Multnomah Co. to Parker-Schram Co., Builders Exchange Bldg., Portland, **$66,547.** Est. $71,729. Bids 7/15. CD 7/7.

Pa., Midland—SWIMMING POOL—Midland Boro, Municipal Bldg., 75x150 ft. rein.-con. swimming pool and bathhouse, with water purification sys. and bath appurtenances for each structure, to Nellis Constr. Co., East Liverpool, O., **$166,589.** Est. $157,639. Ackley, Bradley & Day, 200 Chestnut St., Sewickley, engrs.

Pa., Phila. — REPLACING PIPING — Dpt. Property & Supplies, 18 and Herr Sts., Harrisburg, replacing hot and cold water piping for Bldgs. N-6 and N-7 at Philadelphia State Hospital (Byberry) to C. J. McGonigal, 1928 Quarry St., **$185,333.** Est. $230,000. Bids 7/6. CD 6/8.

●Pa., Phila.—PIER—Dpt. Wharves, Docks & Ferries, Pier 4A, Chestnut St., Pier No. 80 completion to Hughes-Foulkrod Co., 1505 Race St., **$3,100,000.** Bids 4/21. CD 4/25 under LB.

South Carolina — RURAL DISTRIBUTION LINES — Greenwood County Electric Power Assoc., Greenwood, 91 mi. rural distr. lines, Greenwood Co. Owner builds. Approx. **$75,000.** CD 4/14.

●Texas—PIPELINE—Texas Pipe Line Co., Texas Bldg., Houston, 131 mi. 12¾ in. crude oil pipeline between Corsicana and Chico, Wise Co. to Smith Contrg. Co., Fort Worth Natl. Bank Bldg., Fort Worth. Approx. **$2,620,000.** CD 12/27/48.

Tex., Dallas—GAS LINES, etc.—Lone Star Gas Co., 1915 Wood St., natural gas line extens., outlying areas, **$250,000;** addnl. butane distr. lines, **$185,000.** force-account. CD 5/1/47.

●Tex., Houston—TUNNEL—Harris Co. Courthouse and State Hy. Dpt., Austin, Typs S (1), sub-aqueous portions of tunnel in 9 prefabricated segments and sinking in prepared fdn.; Type T (1), 1,175,000 cu. yd. hydraulic embankment, Vehicle Tunnel Proj. between Baytown and LaPorte, under Houston Ship Channel to Brown & Root, Inc., Box 3, **$4,860,205.** Bids 7/21. CD 6/14.

†Va., Fort Eustis — HARDSTANDING — U. S. Eng., 1st. and Douglas Sts., N.W. Wash. 25, D. C., hardstanding in Third Port area. No. 49-080-49-199 (56)M to Horne Bros. Inc., Hilton Village, **$74,373.** Bids 6/27. Awarded 6/29. CD 6/21.

†Washington — STEEL STRUCTURES—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., steel structures for right transformer circuits and right 230 kv switchyard, Grand Coulee Power Plant, Columbia Basin Proj., Spec. 2686, to Muskogee Iron Works, Republic Bank Bldg., Dallas, Tex., **$80,312.** Bids 6/28, awarded 7/12. CD 6/14.

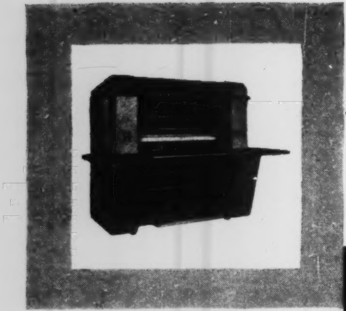
Wyoming—FENCE—Union Pacific R.R. Co., W. C. Perkins, ch. engr., 1406 Dodge St., Omaha, Neb., construct 38,000 ft. wood snow fence and 21,000 ft. corrugated iron fence, snow, in southern Wyoming. Owner builds, **$325,000.**

Ont., Bancroft — MINE DEVELOPMENT — Faraday Uranium Mines Ltd., c/o A. H. Shore, Bancroft, mine development, Own forces, **$50,000.**

Ont., Ottawa — CURLING RING—Rideau Curling Club, 227 W. Laurier Ave., curling rink on Percy St., to T. Fuller Constr. Co. Ltd., 33 Mann Ave., Ottawa, **$150,000.** James Adam, 48 Spark St., archt. CD 7/11.

Que., Montreal—PLAYGROUND PAVILLION —Municipality, playground pavillion, comfort station, to Rochon & Parent Co. Ltd., 5000 13 Ave., **$135,000.** H. A. Gibeau, city engr.

Sask., Prince Albert—CORE DRILLING—Province of Saskatchewan, Regina, core drilling, 15,000 ft., vertical holes, 2,000 ft. deep, standard core barrel cutting 1 1/8 in. core, to Inspiration Mining & Development Co. Ltd. 184 Bay St., Toronto, Ont., Approx. **$75,000.**



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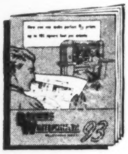

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PROPOSED PROJECTS

WATER SUPPLY

●**Mass., Boston**—City of Boston, Institutions Dpt., City Hall Annex, Boston, viaduct, Long Island Hospital and Moon Island, **$2,000,000.**

Mo., Kirksville—City, City Hall, **$531,600** bond election August 16, WW sys imprvs.

N. C., Southern Pine — Town, C. N. Page, Southern Pines, WW imprvs., **$250,000.** L. E. Wooten & Co., Capital Club Bldg., Raleigh, consult. engrs.

●†**Tex., Camp Hood (P. O. Killeen)** — U. S. Eng., 606 Santa Fe Bldg., Galveston, water sys. for military zone. **$1,500,000.**

Tex., Cleveland—City, W. J. Bryan, mayor, City Hall, c. i. water line extens. **$173,552.** Garrett Eng. Co., 5008 Almeda Rd., Houston, engr.

●**Tex., Dallas**—City, City Hall, Main and Harwood Sts., 90 m. gal. daily capacity water treatment plant. **$5,800,000.** Myers & Noyes, Tower Petroleum Bldg., engrs. CD 12/1.

Tex., Pleasant Grove (Dallas P. O.)—Dallas County Water Control & Imprvt. Dist. 3, 8122 Macon Dr., Dallas, voted **$56,500** bonds, July 12, steel water tower and reservoir; **$28,000** bonds, water well and pumping station; **$75,000** bonds, c. i. water line extens.

SEWERS, WASTE DISPOSAL

●**Ia., Spirit Lake**—Dickinson Co., Spirit Lake, sewerage sys., various towns, along lake region. **$1,250,000.**

Tex., Cleveland—City, W. J. Bryan, mayor, City Hall, sanitary sewer line extens. **$185,731.** Garrett Eng. Co., 5008 Almeda Rd., Houston, engr. CD 8/9/45.

Tex., Pleasant Grove (Dallas P. O.)—Dallas Co. Water Control & Imprvt. Dist. 3, 8122 Macon Dr., voted **$50,000** bonds, July 12, sewage treatment plant extens., **$50,000** bonds, addnl. sewer trunk lines.

BRIDGES

Massachusetts—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston.

Fitchburg—rollstone bridge, **$150,000.** Drummey, Duffill Inc., 80 Boylston St., Boston, engrs.

STREETS AND ROADS

●**New York** — State Dpt. P. Wks., Albany, **Saratoga Co.**—4.25 mi. arterial route along Central Ave., Saratoga Ave., in Mechanicville and connecting routes outside city, **$2,787,000.**

Tex., Beaumont—City, City Hall, rehabilitation of streets, surf. in Neighborhood Traffic area. **$200,000.** R. C. Black, city engr.

Tex., Edinburg—Hidalgo Co. Road Dist. 9, Edinburg, bond election August 20, road construction and imprvs. **$238,000.** CD 7/1.

Tex., Jasper—Jasper Co., Court House, voted **$175,000** bonds, 40 mi. road imprvs., Road Dist. 6. CD 6/10.

EARTHWORK, WATERWAYS

Kan., Leavenworth—City, City Hall, river dock and facilities, **$100,000.**

Wis., Milwaukee—Sewerage Comn. of Milwaukee, Jones Island Milwaukee, Zone 1, relocating, wid'n., deepening portion of Kinnickinnic River, **$100,000.** James L. Ferebee, ch. engr.

AIRPORTS AND AIRBASES

†**N. M., Albuquerque**—LIVING QUARTERS—U. S. Eng., P. O. Box 1538, living quarters at Kirtland Airfield. **$792,000.**

●†**N. M., Roswell**—LIVING QUARTERS, etc.—U. S. Eng., P. O. Box 1538, Albuquerque, living quarters at Walker Air Field. **$6,250,000;** fuel storage and fueling sys. **$422,000.**

†**Tex., Lubbock**—UTILITIES—U. S. Eng., P. O. Box 1538, Albuquerque, N. M., reactivation of Air Base, incl. waterlines and facilities, **$60,000;** sanitary sewers, **$75,000;** paving, grading, drainage, **$50,000;** rehabilitation, remodeling existing bldgs. **$300,000.**

LATIN AMERICA

Mexico, Minatitlan—Mexican Govt., Sria. de S.P.A. Dr. Ramon Pintado, subchief, Mexico, D.F., plans 250 bed hospital. $350,000.

PUBLIC BUILDINGS

●**Calif., San Francisco**—HOUSING—San Francisco Housing Auth., 440 Turk St., plans by Louis P. Hobart, 525 Market St. and Milton Pflueger, 585 Market St., Hunters View Housing, incl. fifty 1 and 2 story wood frame bldgs., incl. 150 units, **$1,608,000;** plans by W. G. Merchant, 57 Post St., and Clarence A. Tantau, 210 Post St., Bernal Dwellings Housing, incl. twenty-two 3 story rein.-con. bldgs. incl. 201 units, **$2,371,820;** plans by Ernest Born, 730 Montgomery St. and Henry H. Gutterson, 21 Powell St., North Beach Place Housing, incl. twelve 3 story, rein.-con. blidgs. incl. 226 units, **$2,673,750;** plans by Douglas D. Stone, 619 California St., and Charles E. J. Rogers, Phelan Bldg., De Hars Plaza Housing, incl. thirty-three 2 story bldgs., incl. 135 units, **$1,478,990;** plans by W. O. Paugh & Edward B. Page, 333 Montgomery St., Glen Crags Housing, incl. forty 1 story and 2 story bldgs., incl. 171 units, **$1,672,865.** CD 4/18/46.

●**Conn., Hartford**—HOME, etc.—City Welfare Dpt., 550 Main St., Hartford, plans by Sherwood F. Jeter, Jr., 25 Lewis St., brick, steel, concrete home and infirmary for aged, Coventry St., **$1,450,000.** CD 11/18/48.

Conn., Newington—SCHOOL—Town, Supt. of Schools, 1225 Main St., plans by Carl J. Malmfeldt Assoc., 36 Pearl St., Hartford, 12 room brick, steel elementary school, and gymnasium, West Cedar St., **$300,000.** CD 3/16/45.

Kan., Ashland—Clark Co., Ashland, plans by Glen Thomas, 125½ N. Topeka St., Wichita, courthouse, jail and sheriffs quarters, **$270,000.**

●**Kan., Great Bend** — HIGH SCHOOL — Bd. Educ., Great Bend, voted **$1,256,700** bonds, July 5, high school, Lorenta, Schmidt, McVay & Peddie, 1832 E. 2 St., Wichita, archts., CD 7/5.

Mass., Athol—Town of Athol Housing Auth., G. Holland chn., Athol, plans by G. Adolph Johnson, 390 Main St., Worcester, 33 unit housing proj., **$330,000.** CD 11/17/48.

●**Mass., Boston**—HOUSING—City of Boston Housing Auth., 10 Post Office Sq., Boston, plans by H. F. Kellogg, 232 Commonwealth Ave., 508 unit Cathedral Housing Proj., South End, **$5,000,000.** Thomas Worcester Inc., 84 State St., engr.

Mass., Plymouth—Town of Plymouth Housing Auth., Plymouth, veterans housing proj. Approx. **$250,000.**

Miss., Cleveland—PLANT—City, plans by Friedman, Alschuler & Sincere, 223 W. Jackson Blvd., Chicago, Ill., mfg. plant for Baxter Laboratories, Inc. **$540,000.** CD 7/11.

Mo., Overland (St. Louis, Zone 14 P.O.)—SCHOOLS—Ritenour Consolidated School Dist., Bd. Educ., G. D. McAliester, pres., 8740 Forest Ave., Overland, St. Louis, Zone 14, voted **$300,000** bonds, addns. to Iveland, Buder and De Hart Schools. CD 6/30.

Mont., Sidney — SCHOOLS — Richland Co. High School, Dist. and School Dist. No. 5, plans by Chandler, C. Cohagen, Hedden Bldg., Billings, 2 story, 78x166 ft. concrete, timber grade school; 3 story, steel concrete, timber wing to high school, **$400,000.** CD 12/20.

N. J., Cresson — SCHOOL — Vorhees Twp. School Bd., Cresson, school, **$250,000.**

O., Lima—AUDITORIUM, etc.—City, Lima, general auditorium bldg. and fieldhouse, **$950,000.**

†**Okla., Fort Sill**—LIVING QUARTERS—U. S. Eng., P.O. Box 61, Tulsa, living quarters and control tower, **$660,000.**

●**Pa., Fallsington**—HIGH SCHOOL—Pennsbury Forrest Bd. Educ., Fallsington, plans by A. E. Micklewright, 72 Ewing St., Trenton, high school, **$1,000,000.**

Pa., Pottstown—HIGH SCHOOL—Pottstown Boro School Dist., Pottstown, high school annex, **$250,000.**

●**Tex., Austin** — SCHOOLS—Austin Independent School Dist., Austin, plans by Page, Southerland & Page, 602 West Ave., A. N. Mc Callum High School in North Austin, **$450,000;** plans by Jesse, Jessen, Millhouse & Greeven, 112 E. 9 St., South Austin High School, **$425,000;** plans by Giesecke, Kuehne & Brooks, 121 E. 8 St., masonry, concrete, steel Negro High School, 20 acre tract, Rosewood and Thompson Sts., **$450,000.** CD 5/14/46.

Tex., Austin—PUBLIC SAFETY—State of Texas, Dpt. Pub. Safety, Austin, public safety bldg., on Dallas Hy., **$750,000.**

Tex., Brenham—SCHOOL—Brenham Independent School Dist., Brenham, plans by Wyatt C. Hedrick, 5201 Fannin St., Houston, consult. engr. and archt., junior high school. Approx. **$450,000.**

●**Tex., Denton**—DORMITORY, HOME ECONOMICS—Texas State College for Women, Denton, plans by Preston M. Geren, N. P. Anderson Bldg., Fort Worth, women dormitory; masonry home economics bldg., **$650,000** each. CD 10/8/45.

Tex., Fort Worth—HIGH SCHOOL—Fort Worth Independent School Dist., Fort Worth, plans by Preston M. Geren, Neil P. Anderson Bldg., masonry high school addn., Arlington Heights, **$250,000.**

Tex., Houston—HEALTH CENTERS—City, Oscar Holcombe, mayor, City Hall, 900 Brazos St., 5 masonry health center units, Lyons and Lockwood Sts., 7200 block Canal St.; Civil Courts and 2 sites not selected, **$850,000.**

Tex., Nederland—SCHOOL—Nederland Independent School Dist., Nederland, bond election August 12, 25 classroom school, **$550,000.** Maurice E. Walmer, Gilbert Bldg., Beaumont, archt. CD 4/14.

Wis., Lake (P.O. Milwaukee) — SCHOOL ADDN.—Dist. No. 3, 4506 S. Jasper St., Milwaukee, Zone 7, plans by H. C. Haeuser, 2051 W. Wisconsin Ave., Zone 3, 2 story auditorium-classroom, Burdick School addn., **$320,000.**

Wis., Oconomowoc — SCHOOL — Bd. Educ., Oconomowoc, plans by Ebling, Plumkett & Keymar, 1220 N. Milwaukee St., Milwaukee, Zone 2, Park Lawn Grade School addn., **$300,000;** high school addn., **$365,000.**

Ont., Chatham—ADMINISTRATION BLDG.—Kent Co., Chatham, plans by J. W. Storey, 169 Queen St., Chatham, administration bldg., **$300,000.**

Que., Maniwaki—SCHOOL—School Comn., P. Joanis, secy., Maniwaki, plans by A. Martineau, 200 Bay St., Ottawa, Ont., school and teachers residence. Approx. **$250,000.** CD 6/16.

COMMERCIAL BUILDINGS

Ala., Birmingham—APARTMENT DEVELOPMENT—Owner c/o D. O. Whilldin, archt., Empire Bldg., Birmingham, and Stevens & Wilkinson, archts., 157 Luckie St., N. W., Atlanta, Ga., apartment development, over **$500,000.**

Calif., Mercer—OFFICE—Farmers Insurance Group, 4680 Wilshire St., Los Angeles, 35,000 sq. ft. office, **$300,000.**

Calif., Mill Valley—RESIDENCES—Goheen Constr. Co., Inc., Box 213, 100 residences in Alto Dist., **$600,000.**

●**Calif., Richmond**—RESIDENCES—Tarman & Bechtel, 1002 Highland Blvd., Hayward, 300 residences in North Richmond, over **$2,000,000.**

●**Del., Wilmington**—APARTMENT—J. Frank Darling, 7 St. and Greenhill Ave., or P. O. Box 127, Wilmington, apartment at 1601 N. Franklin St., **$1,000,000.**

●**Fla., Miami** — HOTEL — Bayshore Terrace Corp., c/o Tony Sherman 141 N. E. 3 Rd. Ave., Miami, hotel. **$1,000,000.**

Ill., Berwyn—STORES—George W. Prassas & Co., 11 W. Washington St., Chicago, Zone 2, plans by Carl M. Teusch 1105 W. Lawrence St., Chicago, Zone 40, 2 bldgs. and eight 1 story steel, brick retail shops, **$300,000.**

Ill., Chicago—OFFICE AND RECREATION BLDG.—Amalgamated Meat Cutters Union, AFL, N. W. corner Sheridan Rd. and Diversy Blvd., plans by Everett F. Quinn & Assoc., 134 N. LaSalle St., Chicago, 2 story, office and recreation bldg., **$350,000.** CD 4/28.

Ill., Chicago—STORE—American National Bank & Trust Co., 33 N. LaSalle St., Chicago, Zone 2, plans by Alschuher Friedman & Sincere, 223 W. Jackson St., Chicago, Zone 6, steel, concrete store, corner Michigan and 112 Sts., **$500,000.** J. C. Penny Co. lessee.

Ia., Oskaloosa—CLUB BLDG.—Aerie No. 276, F. O. E., plans by Haynes & Griffith Fleming Bldg., Des Moines, club bldg. alterations and addns., **$250,000.** E. H. Pietsch Engrg. Co., Plymouth., Des Moines, engrs.

Kan., Topeka—HOSPITAL—St. Francis Hospital, 1719 W. 6 St., plans by R. A. Coolidge, New England Bldg., Topeka, hospital addn., **$409,000.**

La., New Orleans—HOUSING—Schill-Wilson Inc., c/o Rene Gelpi, archts., 318 Carondelet St., several residential developments. Approx. **$250,000.**

N. Y., New York—BANK, OFFICE—First Federal Savings & Loan Assoc., of New York, 30 Rockefeller Plaza, Zone 20, plans by R. B. O'Connor & W. H. Kilham, Jr., 101 Park Row, Zone 17, bank and office at 235-37 First Ave. **$400,000.**

●**O., Canton**—CHURCH—James A. Mc Fadden, Bishop, 144 W. Wood St., Youngstown, church, rectory, school and convent on Market St., between 28 and 30 Sts. on 10 acre tract. **$1,000,000.**

●**O., Youngstown**—HOSPITAL—Youngstown Hospital Assn., c/o David A. Andres, supt., Gypsy Lane and Goleta Sts., plans by Otto J. Kling and Walter Frost, 661 Wick Ave., modernizing South Side unit, adding 30 beds, new surgical facilities, kitchens, etc. **$1,500,000.**

Pa., George School—GYMNASIUM AUDITORIUM—George School, George School, plans by Heacock & Platt, 152 N. 15 St., Phila., gymnasium and auditorium. **$250,000.**

Pa., Norristown—HOSPITAL—Dr. Joseph B. Wolffe, 1829 Pine St., Phila., hospital. **$250,000.**

Tex., Dallas—SCHOOL—Buckner Orphans Home, U. S. Hy. 80, plans by John B. Danna, 2618 Cedar Springs Ave., 2 story 115x153 ft. masonry vocational school, 3 workshop units, **$275,000.** R. L. Rolfe, 2204 Griffing St., structural engr.; Zumwalt & Vinther, Mercantile Bank Bldg., mechanical engrs.

Tex., Houston—HOUSING—Hamilton Beasley, 2417 Blodgett St., addnl. housing proj. West of Airline Rd. **$450,000.**

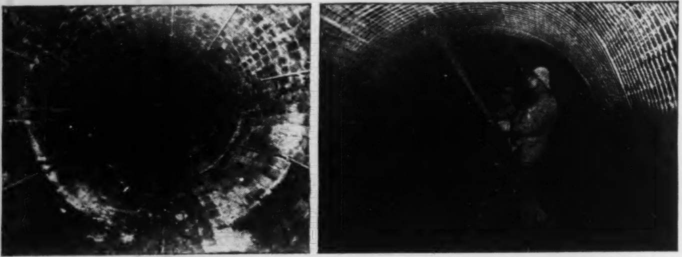
Tex., Marshall—DORMITORY—East Texas Baptist College, Dr. H. D. Bruce, pres., Marshall, plans by Wyatt C. Hedrick, 904. Forth Worth Ave., Dallas, concrete, boys dormitory. **$250,000.**

Tex., Quanah — CHURCH — First Baptist Church, Quanah, plans by Jos. E. Gaylord, 503 N. P. Anderson Bldg., Forth Worth, masonry church, concrete slab fdn. **$250,000.**

●**Tex., San Antonio**—HOSPITAL—Pan-American Cancer Foundation, c/o Dr. Dudley Jackson, pres., Nix. Prof. Bldg., 250 bed cancer research and treatment center hospital. **$2,250,000.**

●**Va., Richmond**—OFFICE—Home Beneficial Life Insurance Co. Inc., 900 E. Broad St., plans by Carneal & Johnston, Atlantic Life Bldg., 6 and Main Sts., office, at 3900 block of West Broad St. **$1,500,000.** CD 8/23/48.

"GUNITE" RENEWS OLD BRICK SEWERS



These pictures show how we are rebuilding nearly four miles of combination sanitary and storm sewers at Bloomington, Illinois by lining them with mesh reinforced "GUNITE."

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CORE BORINGS
for Foundations, Dams, Bridges and all Heavy Structures
GROUT HOLES

Tinney Drilling Co.
Grafton, W. Va.

●**Ont., Matheson**—HOUSING—Asbestos Corp. Ltd., Canada Cement Bldg., Montreal, Que., 200 houses, **$1,300,000.**

Ont., Port Credit — HOUSING — Harold E. Clarke, 22 Lake Shore Rd., 70 houses, **$350,000.** Town Planning Consultants Ltd., 24 E. Bloor St., Toronto, engrs.

INDUSTRIAL BUILDINGS

Ill., Chicago—FACTORY—Bowman Dairy Co., 416 N. Whipple St., Zone 12, plans by Leon F. Stanhope, 800 Davis St., Evanston. 1 story, 95x126 ft. concrete, steel ice cream factory, **$210,000.**

Ill. Chicago—PLANT—Swifth & Co. 7409 S. State St. Zone 19, plant addns. **$300,000.**

●**Ill., North Aurora**—PLANT—Armour & Co., Pharmaceutical Div., Union Stock Yards, Chicago, 1 or 2 story, steel plant. **$1,500,000.**

Me., Bangor — WAREHOUSE—Sears Roebuck & Co., 4640 Roosevelt Blvd., Phila., Pa., warehouse, Approx. **$100,000.**

Mass., Boston—WAREHOUSE—Sears Roebuck & Co., 4640 Roosevelt Blvd., Phila., Pa., warehouse, Approx. **$100,000.**

N. Y., New York—GARAGE, SHOP—Dexter Motors, Inc., 1892 First Ave., Zone 29, plans by William I. Hohauser, 1841 Broadway, Zone 23, garage, shop, office and salesrooms at 1890 First Ave. **$250,000.**

N. C., Sevier — PLANT—American Thread Co., c/o J. H. Daughdrill, mgr. Plant, Clover finishing plant.

O., Cleveland — WAREHOUSE — Cleveland Stevedore Co., foot W. 9 St., plans by George S. Rider Co., 3800 Terminal Tower, 1 story 90x300 ft. terminal warehouse and side track, incl. repairing ship facilities, double track siding on north and south side for loading and unloading. **$200,000.** CD 4/18.

●**Tex., Houston**—TRUCK TERMINAL—Max Lidell c/o Southern Engineering Co., c/o Duncan G. Allen, 1711 Bell St., truck terminal, rein.-con. paving, water, sewer utilities, Griggs Rd. and Wayside Dr. $3,000,000.

Alta., Edmonton — WAREHOUSE — Rule, Wynn & Rule, architects., 300 Birks Bldg., Edmonton, offices and warehouse for Crane Ltd., Jasper Ave. and 109 St., Approx. **$500,000.** CD 5/2.

Alta., Edmonton — WAREHOUSE—Pilkington Bros. (Canada) Ltd., 10364 105 St. Edmonton, and 19 Mercer St., Toronto, Ont., warehouse and offices, Approx. **$200,000.**

Ont., Toronto—PLANT—Peerless Carbon & Ribbon Co. Ltd., 214 E. King St., plant, Shelbourne St. **$100,000.**

Ont., Wallaceburg—PLANT—News Publishing Co., 318 James St., 38x100 ft. newspaper and job printing plant, Wellington St., **$100,000.**

UNCLASSIFIED

Ill., Chicago — LOADING DOCK—Chicago Herald-American, Hearst Publications, 326 W. Madison St., Chicago, plans by Lockwood Greene Engrs. Inc., 10 Rockefeller Plaza, New York, Zone 17, N. Y., 3 story, loading dock, **$350,000.**

●**Miss., Jackson**—FAIRGROUND FACILITIES—Mississippi Agricultural & Industrial Exposition, c/o Jones & Haas, archts., Standard Life Bldg., addnl. fairground facilities, **$1,000,000.**

●**Missouri**—RURAL DISTRIBUTION LINES—Ozark Border Electric Co-operative, Poplar Bluff, 600 mi. rural distr. lines, sys. imprvs., 22 mi. transmission lines, 29 mi. tie lines, two way radio, Stoddard, Dunklin, Mississippi, New Madrid, Cape Girardeau, Scott and Bollinger Counties, **$1,325,000.** Stanley Engrg. Co., Muscatine, Ia., engrs., CD 6/16.

O., Euclid—SWIMMING POOL—City, City Hall, plans by Wm. A. Strong, 4900 Euclid Ave., Cleveland, and Fulton, Krinksy & DeLamotte, 6014 Euclid Ave., Cleveland, swimming pool, wading pool and bathhouse on E. 222 St., north of City Hall. **$275,000.**

●**Texas, Louisiana, Arkansas, Missouri and Illinois** — NATURAL GAS PIPELINE — The Peoples Gas Light & Coke Co., 122 S. Michigan St., Chicago, Ill., 1,000 mi. 30 in. welded joint natural gas pipeline from Houston, Tex., to Joliet, Ill. **$100,000,000.**

●**Tex., Austin**—RECREATIONAL—Austin Development Foundation, Nalle Bldg. Annex, recreational proj. near here, **$4,500,000.**

Tex., Brownwood—STOCK SHOW—Brown Co. Dpt. of Brownwood Livestock Assoc., Brownwood, stock show, incl. barn, arena, grading, utilities. **$150,000.**

Tex., Port Arthur—SWIMMING POOLS—City, Port Arthur, rein.-con. swimming pools, Gilham Circle Park, **$80,000;** Lions Park, **$75,000;** City Park on 16 St. **$60,000.** H. H. Poole, city engr.

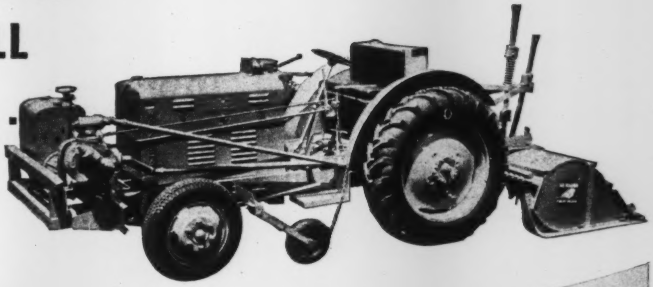
Newfoundland, St. Johns—RADIO STATION—Colonial Broadcasting Sys. Ltd., St. Johns, radio station exten.

●**Ont., Matheson** — TOWN SITE — Canadian Johns-Mansville Co. Ltd., Asbestos, Que., town site, mill bldgs., northern Ontario asbestos deposit development, near here, approx. 40 mi. south of Timmins. Approx. **$3,000,000.**

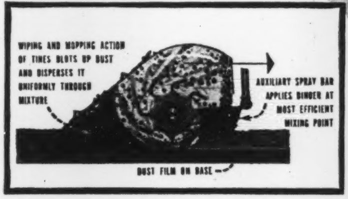
Que., Montreal—RADIO BROADCASTING STATION—La Societe St. Jean Baptiste de Montreal, Montreal, broadcasting station.

Sask., Yorkton—RADIO BROADCASTING STATION—Yorktown Broadcasting Co. Ltd. Yorkton, broadcasting station exten.

NEW STANDARDS OF PRECISION IN ALL ROAD-MIXING . . . NEW HIGHS IN DAILY OUTPUT



WITH THE NEW SELF-PROPELLED SEAMAN TRAV-L-PLANT


WIPING AND MOPPING ACTION OF TINES BLOTS UP DUST AND DISPERSES IT UNIFORMLY THROUGH MIXTURE
AUXILIARY SPRAY BAR APPLIES BINDER AT MOST EFFICIENT MIXING POINT
DUST FILM ON BASE

A Superior Road-Mix at far less cost

Rotating tines *clean* sub-grade, lift soil and aggregate and throw it all-directionally. Breaks soil into minute particles to blend with binder uniformly throughout full depth of treatment. Pitch and curvature of tines throw material *laterally* and *transversely* to blend equally.

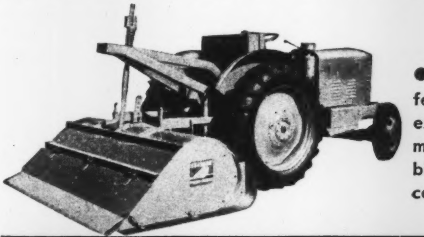
Spillover ahead of rotor and carry of materials within trailing edge of hood (as far as 50 feet) result in continuous remix, — positive uniformity and intimacy of mix-in *longitudinal* travel. Uniform distribution of coarse and fines with a thin distribution of fines over entire surface is due to curvature and ironing and leveling action of mixing chamber.

Here's the time-tested, internationally accepted SEAMAN Pulvi-Mixer built into a rugged, powerful, entirely *self-propelled* unit. And, through a wide range of gear selections and engine settings the TRAV-L-PLANT mixes at any rate of forward travel from 100 feet to 600 feet per minute. Thus efficient mixing for *any* stabilization under *any* condition is merely a matter of choosing the proper rate of forward speed. There's a road gear, too, for transport.

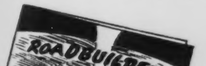
MORE! The Self-Propelled SEAMAN TRAV-L-PLANT is equipped with spray bar, pump and tachometer for the application of bituminous material or water immediately ahead of the mixing rotor. No migration. No evaporation. No variables in application. . . . Close-coupled, the SEAMAN TRAV-L-PLANT turns at the section-end as shortly as a tractor. All controls in instant, natural access to operator. View of work ahead and mix behind is clear and unobstructed.

THE SEAMAN SELF PROPELLED PULVI-MIXER

The SEAMAN TRAV-L-PLANT gives you more square yards per day, — absolute control of mixture, ample power for every job — all at far less operating cost and at far less investment than other mixing methods.



- Every benefit of the TRAV-L-PLANT is offered in the Self-Propelled SEAMAN MIXER except the spray bar, pump and tachometer are not installed. Ideal for work with bituminous distributor or sprinkler and of course, is available at less initial cost.



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Chapman

STANDARD SLUICE GATES

Your maintenance and installation problems will be far fewer if you standardize on Chapman *Standard* Sluice Gates. Stems and couplings, for instance, are completely interchangeable . . . match-marking in the field unnecessary.

What's more, Chapman Sluice Gates can be obtained with any type of operating control . . . manual, hydraulic cylinder or motor operated floor stand. The motor unit is delivered wired and ready to install... completely enclosed in its own weatherproof housing. A handwheel is provided for emergency operation if power should fail.

Be sure to send, today, for Chapman's Sluice Gate Handbook with complete detail on all Chapman Standard Sluice Gates and various types of control.

The Chapman Valve Mfg. Co.

INDIAN ORCHARD, MASSACHUSETTS

CONSTRUCTION REPORTS—Second Section

WATER SUPPLY

BIDS ASKED

August 11

Mo., Perryville—City, City Hall, Edwin J. Layton, mayor, 500,000 gal. water standpipe, two low service pumps, high service meter. Plans deposit $10. Russell & Axon, 408 Olive St., St. Louis, Zone 2, engrs.

August 18

Mass., Boston—Commonwealth of Massachusetts, Metropolitan Dist. Comr., 20 Somerset St., Boston, Alewife Brook Conduit, from Concord Ave., Cambridge, northerly, to point in Arlington, approx. 500 ft. southwesterly from Massachusetts Ave., and branch at upper end extend. westerly to Cambridge-Belmont line, incl. furnishing and laying approx. 7,520 lin. ft. 36- to 66-in. rein.-con. pipe, etc., Plans deposit $10, Karl R. Kennison, ch. engr.

Bids Asked

Tex., San Antonio—Billy Mitchell Village, Inc., c/o Arthur E. Baird, San Pedro Ave., WW. $60,000. Frank T. Drought, 117 W. Pecan St., engr.

Tex., Victoria—E. I. duPont de Nemours & Co., du Pont Bldg., Wilmington, Del., 20 mi. c.i. waterlines from southeast of Victoria and ending near here at proposed chemical plant. Approx. $350,000. Frank R. MacKie, c/o owner, engr. CD 10/20/48.

LOW BIDDERS

Tex., Electra—City, c/o mayor, Electra, July 25, Sect. 1, dam and pump station from W. O. Pelphrey, Electric Bldg., Fort Worth, **$211,975.** Sec. 3, filter plant from Payne Constr. Co., Abilene, **$77,000.** CD 7/11.

Tex., La Feria—City, City Hall, July 18, WW sys. extens. and supply well from Fitzgerald & Co., Donna, and A. & T. Drilling Co., Harlingen, **$30,701.** Sigler, Clark & Winston, Weslaco, engrs.

Tex., Rhome—City, City Hall, rejected bids July 21, water supply well, pump house, pumping unit. Approx. **$30,000.** CD 7/13.

Tex., Texas City—Galveston County Water Control & Imprv. Dist. 4, Texas City, July 22, WW sys. imprvs. from L. H. McIntire, Texas City, **$32,200.** CD 7/5.

CONTRACTS AWARDED

Ga., Valdosta—City, Valdosta, well house and pump to Layne-Atlantic Co., Albany, **$35,035.** Bids 7/20. CD 7/5.

Kan., Mullinville—City, City Hall, Lloyd Cooper, city clk., WW and distr. sys., to Burt & Binford, Hutchinson, **$51,574.** Est. $58,000. Bids 7/20. CD 7/11.

●N. Y., New York—Bd. Water Supply, 120 Wall St., Zone 5, constructing Delaware Tunnel for the Delaware Aqueduct comprising approx. 25 mi. concrete lined pressure tunnel, circular in sect. and 11 ft. in finished diam. for practically its entire length, the intake works, consisting of intake channel and intake chamber with brick and granite trim superstructure and shafts 1 and 2 which will be circular in sect. and concrete lined, Contr. 405, Approx. 20,200 lin. ft. tunnel incl. intake structures in Town of Colchester, Delaware Co.; Contr. 406, approx. 43,560 lin. ft. tunnel, incl. Shaft 1, approx. 605 ft. deep and 14 ft. in diam. except for 150 ft. enlarged sect. 20 ft. in diam. Towns of Colchester, Delaware Co. and Rockland, Sullivan Co.; Contr. 407, approx. 40,350 lin. ft. tunnel, incl. Shaft 2, approx. 965 ft. deep with 14 ft. diam.; Towns of Rockland and Neversink, Sullivan Co.; Contr. 408, approx. 27,750 ft. tunnel from the portal at the outlet and approx. 520 ft. 9 ft. tunnel at the portal, Town of Neversink, Sullivan Co. to Walsh Contr. Co. and B. Perini & Sons, Inc., 1 E. 43 St. Zone 17, **$44,224,577.** Bids 7/19. CD 7/20. Under LB.

La., Breaux Bridge—Town, Town Hall, WW imprvs., to Magnolia Constr. Co., P. O. Box 1975, Baton Rouge, **$58,500.** CD 7/15, under LB.

Tex., Bonham—City, 16,500 lin. ft. 3 to 8 in. c.i. pipe distr. sys. extens., purchase and hire, **$44,000.** Stokes & Brenneke, Burt Bldg., Dallas, engrs.

SEWERS, WASTE DISPOSAL

BIDS ASKED

August 8

Conn., Derby—State, G. Albert Hill, State Hy. Comr., State Office Bldg., 865 lin. ft. 48 in. storm sewer incl. section encased in 60 in. tunnel liner under N. Y., N. H. and H. R.R. tracks and 370 lin. ft. 36 in. sanitary sewer on section of Shelton-Derby-Ansonia Expressway, FAP U-136 (5), Contr. 1.

August 10

Ont., Mount Forest—C. A. Meadows & Assoc., 4 Grange Rd., Toronto, 32,468 ft. 8-in. sewers, 137 manholes, 1 sewage pump and pressure sewer, Approx. $100,000 for Town of Mount Forest, A. Hutchison, mayor, Plans deposit $100, CD 8/23, under LB.

August 15

Md., Towson — Bd. Comrs., Baltimore, Co., Court House, approx. 3,740 lin. ft. 18- to 27-in. rein.-con. pipe, 780 lin. ft. 33- to 42-in. R. C. C. PX, 5800 cu. yd. excavation, 1,500 cu. yd. class A concrete, 1,200 sq. yd. class A. concrete for paved channels, Plans deposit $5. Wm. F. Neals, ch. engr. Contr. 137.

August 22

Ga., Atlanta—Fulton Co. Bd. Rd. & Revenue Comrs., Courthouse, South River Sewage Pumping Station. Plans deposit $10. Wiedeman & Singleton, Box 1878, Atlanta, engrs.

August 25

Ia., Des Moines — City, City Hall, northwest sewer sys., **$138,958,** J. M. Tippee, city engr. CD 1/4/46.

Bids About November 21

Fla., Tampa—City, Tampa, master sewer system, $13,500,000. Greeley & Hansen, 220 S. State St., Chicago, Ill., engrs. CD 3/30/45.

Bids Asked

Tex., San Antonio — Billy Mitchell Village, Inc., c/o Arthur E. Baird, San Pedro Ave. sanitary sewers. **$75,000.** Frank T. Drought, 117 W. Pecan St., engr. CD 4/6.

LOW BIDDERS

Ind., Richmond—Bd. P. Wks., City Hall, July 22, sewage treatment plant, from Weikel Constr. Co. Inc., 1150 Fairfield St., Fort Wayne, **$884,245.** Est. $800,000. H. Steeg & Assoc., N. Meridian St., Indianapolis. engrs.

Mass., Milton—Town, Bd. Sewer Comrs., Town Hall, July 19, 8,600 ft. 8- and 12-in. pipe sewers and appurtenances, from Leo Constr. Co., 20 Liberty St., Everett, **$91,636.**

Mass., West Roxbury—City of Boston, Dpt. P. Wks., City Hall Annex, Boston, July 20, sewerage work, New Haven Rt., from Andrew P. Keegan, 125 Halleck St., Roxbury, **$67,848.**

O., Elyria — City, City Hall, July 20, Glover Ditch sewer on Cortland St., 120 in. storm sewer, 280 ft. 48 in. from Continental Constr. Co., 19615 Nottingham Rd., Cleveland, **$383,623** monolithic pipe, **$557,872** concrete pipe. CD 7/13.

Tex., La Feria — City, La Feria, July 18, sanitary sewer sys. extens. and imprvs. from Fitzgerald & Co., Donna, **$51,180.** Est. $50,000. Sigler, Clark & Winston, Weslaco, engrs.

CONTRACTS AWARDED

●Ill., Chicago—City, Dpt. Purchases, Contracts & Supplies, City Hall, auxiliary outlet sewers, Kostner Ave., Sys. No. 1-B, to Michael Pontarelli Inc., 4248 N. Kilpatrick St., **$1,242,420.** Bids 6/7. Awarded 7/25 CD 6/13.

Va., Roanoke — City, Municipal Bldg., sanitary sewers in Washington Heights area to M. S. Hudgins, 102 23 St. S.E. **$338,953.** CD 5/25.

Ont., Pembroke—Town, S. A. Thompson, clk., Town Hall, sewers, sewage pumping station, to M. Sullivan & Son. Ltd., Arnprior, Approx. **$50,000.** Bids 6/13. CD 5/31.

BRIDGES

BIDS ASKED

STATE HIGHWAY LETTINGS

August 8
Connecticut
August 11
Massachusetts
August 12
Kentucky

August 16
North Carolina
August 17
Texas
August 19
Pennsylvania

LOW BIDDERS

†Georgia — U. S. Eng., P.O. Box 1169, Mobile, 7, Ala., July 21, constructing substructure and approaches for Allatoona Creek Crossing Bethany Rd., Bartown Rd., Serial No. CIVENG 01-076-50-3, from The Coffee Constr. Co., Eastman, **$235,821.** CD 7/13.

Maryland — State Hy. Dpt., Baltimore, July 26, piers 41 to 57 inclusive, substructure, Chesapeake Bay Bridge, Sandy Point and Stevensville, Contr. CBB 10-7-87, Anne Arundel and Queen Anne Counties, from Merritt-Chapman & Scott Corp., 17 Battery Pl., New York, N. Y. **$915,475.** Est. $715,408. CD 7/27.

Massachusetts — Commonwealth of Massachusetts, Dpt. P. Wks., 100 Nashua St., Boston, July 19, bridge and approaches, Bridge and Washington Sts., Salem, from Berke Moore Co. Inc., 8 Newberry St., Boston, **$839,075.** CD 7/7.

Massachusetts—Mystic River Bridge Auth., E. A. Brest, chn., 6 Beacon St., Boston, Zone 8, July 21, Contr. B, lighting installation, Mystic River Bridge, Charlestown and Chelsea, from Anderson Coffey Co., 22 Shawmut Ave., Boston, **$79,900.** CD 7/7.

North Carolina — State Hy. and Pub. Wks. Comn., Raleigh, July 26, 6 bridges on Durham By-Pass between point 2.62 mi. west of Durham City limits and Avondale Dr. Proj. 4118, Durham Co. from John H. Brinkley, Thomasville, **$152,002.** Est. $150,000-$175,000. CD 7/15.

CONTRACTS AWARDED

Massachusetts — Commonwealth of Massachusetts, Dpt. P. Wks., 100 Nashua St., Boston, bridge reconstruction, Merrimack River, Haverhill & Groveland, to T. Stuart & Son Co., 70 Phillips St., Watertown, **$697,201.** Bids 7/19. Awarded 7/22. CD 7/12.

STREETS AND ROADS

BIDS ASKED

STATE HIGHWAY LETTINGS

August 9
Kansas
August 10
Rhode Island
August 12
Kansas
Kentucky

August 16
Texas
Virginia
Wisconsin
August 17
California
Pennsylvania
August 19
Pennsylvania

August 8

Connecticut—State, G. Albert Hill, state hy. Comr., State Office Bldg., Hartford,

Montville—grav. 6,570 lin. ft. on Fire St.

Plainville—bit. 1,590 lin. ft. on Hughes, Cross and Wilson Sts.

Skelton—grading, drainage 3,937 lin. ft. Shelton-Derby-Ansonia Expressway, 8x12 ft. rein.-con. box culvert Burying Ground Brook.

West Haven—b. conc. 8,375 lin. ft. on Campbell Ave.

Wethersfield—broken stone base course 2,350 lin. ft. on Thornbush Rd.

August 9

Maryland—State Hy. Dpt., Baltimore.

Anne Arundel Co.—grading, draining, c. conc. surf. 6.296 mi. divided highway beginning at South River, near Defense Hy. U. S. Rt. 50, westerly by relocation to point on Crain Hy., Plans deposit $5.

August 10

Louisiana—State Hy. Dpt., Baton Rouge,

Avoyelles Parish—grav. surf. course, 12.5 mi. Kolin-Effie, Moncla-Vick and Effie-North Hys., State Rt. 57-D, 295 and 1215. S.P. 142-02-03, 376-01-07 and 805-05-04.

Evangeline Parish—washed grav. furnished spot dumped certain public roads, Ward 3, S.P. 703-05-43.

Grant Parish—sand clay grav. surf. 2.5 mi. Ante Loop Rd., S.P. 703-05-42.

Louisiana—State Hy. Dpt., Baton Rouge,

Union Parish—shaping roadway, drainage structures, repairing timber bridges, aggregate type base course bit. surf. 6.306 mi. Lillie-Farmville Hy., State Rt. 411, S. P. 154-03-06. Plans deposit $2.

August 18

New Jersey—Spencer Miller, Jr., state hy. comr., State Hy. Dpt., Trenton,

Hudson Co.—channelization and wid'n. Rt. 1, Sects. 4E and 5A, Broadway and Wallis Ave., Jersey City.

channelization of Rt. 1, Sects. 8 A and 9 C, Danforth Ave., Jersey City. Plans deposit $10. each. Adv. ENR 8/4.

September 12

Oklahoma—State Hy. Dpt., Oklahoma City, Zone 5,

Oklahoma Co.—1.71 mi. of 4 lane road, Bypass route on U.S. 66, from 63 Eastern to Lincoln Blvd., $675,000. S. K. McClelland, c/o owner, engr. CD 1/19.

LOW BIDDERS

Colorado—State Hy. Dpt., Denver, July 19, grading structures, oil processing 8.959 mi. State Hy. 8, Colo. Proj., F 017-3 (1), Cheyenne Co. and stabilizing, oil processing 15.402 mi. State Hy. 10 from approx. 4 mi. east of Del Norte and exten. west through Del Norte to approx. 10.5 mi. west of Del Norte, Rio Grande Co., from Brown Constr. Co., 1530 E. Abriendo Ave., Pueblo, **$213,238,** est. $258,516 and **$124,956,** est. $154,542 respectively. CD 7/11.

Illinois—State Hy. Dpt., Springfield, rejected bids July 15, bit. resurf. 8.98 mi. U. S. Rt. 50, Marion and Clinton Counties, L. B. **$366,303;** bit. resurf. 10.51 mi. State Rt. 1 and U. S. 45, White Co., L. B. **$391,982.** CD 7/19, under LB.

Massachusetts—Commonwealth of Massachusetts, Dpt. P. Wks., 100 Nashua St., Boston, July 19, hy. work, Sandwich, from Auburndale Constr. Co. & Marino Bros., 482 Grove St., Newton, Lower Falls, **$470,676.** CD 7/13.

North Carolina—State Hy. and Pub. Wks. Comn., Raleigh, July 26, TBM and b. conc. binder and surf. course 9.28 mi. U. S. 301, wid'n. and resurf. from Elm City to point near Tar River Bridge in Rocky Mount, Proj. 1614 Nash and Wilson Counties from Exum-

Cline Constr. Co., Box 1021, Rocky Mount, **$314,048*****grading 4.49 mi. from point 2.62 mi. west of Durham city limits, east to Avondale Dr. Proj. 4116, Durham Co. from Edison Constr. Co., Mocksville, **$211,426*****sand asph. base and surf. course 1.2 mi. N. C. 77, wid'n. and resurf. N. C. 77 in Hamlet, Proj. 6646, Richmond Co. from Blythe Bros. Co., 424 S. Brevard St., Charlotte, **$50,278.** Est $50,000-$75,000***bir. conc. binder and surf. course 12.67 mi. U. S. 221, 64 and 70, in and around Marion and Glen Alpine and from Clinchfield R. R. to Burke county line, Proj. 8444, Mc Dowell Co. from Dickerson, Inc., Monroe, **$137,848.** Est. $150,000-$175,000***T. B. M. and bit. 10.34 mi. N. C. Route 26 from Red Hill to Tennessee State Line, Proj. 8561, Mitchell Co. from W. E. Graham & Sons, Cleveland, **$258,989.** Est. $250,000-$300,000***grading, STBC, BST or SA, or bit. conc. 8.9 mi. 2 sects. of roads in vicinity of Goldsboro, Betterment Sect. 4-7-39-18, Wayne Co. from Barrus Constr. Co., Box 561, Kinston, **$67,405.** Est. $50,000-$75,000***grading, c. conc. 2.46 mi. from point in U. S. Route 17, southwest of city limits of Elizabeth City, northeast to a point in U. S. 17, west of North city limits, Proj. 1734, Pasquotank Co., from Ames & Webb, Inc., Box 4001, Norfolk, Va., **$236,902.** Est. $200,000-$225,000***added material, sand asph. base course or bit. conc. binder and bit. conc. surf. 11.49 mi. on State Proj. 3862 from point 5 mi. east of Maxton northeast to U. S. 301, Proj. 3864, Robeson Co. from Nello L. Teer Co., Box 1131, Durham, **$218,519.** Est. $225,000-$250,000. Bids 7/26. CD 7/15, 7/18, 7/20.

Virginia—State Hy. Dpt., Richmond, rejected bids July 19, grading, hard surf. 5.11 mi. Secondary Route 707 between Rivercombs Corner and Culpeper Co. line, Rappahannock Co. L. B. **$86,561.** CD 7/25, under LB.

CONTRACTS AWARDED

Idaho—State Hy. Dpt., Boise, bit. surf. 10.907 mi. U. S. 95 between Moctilene and Warley, Benewah and Kootenai Counties, to Standard Asphalt Co., N. 119 Post St., Spokane, Wash., **$196,580;** Est. $192,614. CD 7/14; bit. surf. 14 mi. U. S. 93, Twin Falls Co., to Hoops Constr. Co., Twin Falls, **$203,621**, Est. $261,761. Grand total $400,201. Bids 7/22. Awarded 7/23.

Ill., Urbana—Champaign Co., Court House, Urbana, grading, draining, black top surf. 4 mi. roads, incl. Sadorus Rd., and Sellers Rd., Champaign Co., to Champaign Asphalt Co., Champaign, **$187,344** and **$150,257** respectively, CD 7/3/46.

Iowa—State Hy. Dpt., Ames, c. conc. D. 815 mi. F 278 (2) Benton Co. to Fred Carlson Co., Decorah, **$589,439.** Bids 7/9 CD 7/27, under LB.

Ia., Sioux City—City, C. A. Norbon, city clk., b. conc. 4. 5, Pearl, Water and Jones Sts., and Stone Park Blvd., to Flinn Paving Co., 1900 Howard St., **$64,092.** Est. $75,000. Bids 7/22.

Miss., Jackson — City, City Hall, paving south Gallatin St., to Clark Bros. Constr. Co., First Federal Savings & Loan Bldg. Jackson, **$125,603.** Bids 7/14. CD 7/1.

Texas—State Hy. Comn., Austin, c. conc. and grade separations 4.56 mi. U. S. Hy. 75, sect. of Gulf Freeway, FI 466 (17), Galveston Co. to Austin Road Co., P. O. Box 1590, Dallas, **$922,760.** Bids 7/20. CD 7/25, under LB.

Tex., Big Spring—City, asph. street surf., concrete curbs, force-account. **$70,000.** CD 3/5/47.

Tex., Bonham—Fannin Co. Courthouse, Bonham, reconstruct, repair, black-top repaving various sects., purchase and hire. **$110,000.** CD 3/2/48.

Tex., Gonzales—City, Gonzales, 30 addnl. blocks 8 in. gravel base, 2 in. Uvalde rock asph. street paving, force-account. **$75,000.** Garrett Engr. Co., 5008 Almeda St., Houston, engr. CD 11/3/48.

Tex., Little River—Bell Co. Courthouse, Belton, road construction between Bartlett and Little River. Own forces. **$55,000.**

Virginia—State Hy. Dpt., Richmond, macad. 3.8 mi. U. S. 15 south from Kingsville, Prince Edward Co. to Wiley N. Jackson Co., Inc., R. F. D. 4, Roanoke, **$136,261.** Bids 7/19. CD 6/30.

EARTHWORK, WATERWAYS

BIDS ASKED

August 10

●**Texas** — HYDRO ELECTRIC DAM — Lower Colorado River, c/o Max Starcke, gen. mgr., P. O. Box 1153, Austin, Marble Falls Dam Proj., hydro-electric flood prevention, incl. concrete spillway, concrete power house, incl. 73,000 cu. yds. concrete, 8 steel spillway gates, 2 intake tainter gates, rock fdns. 2 mi. below Marble Falls, **$7,500,000;** hydro-electric flood prevention dam, incl. concrete spillway, concrete powerhouse, gravity and reinforced walls, earth dam and appurtenances, incl. 130,000 cu. yds. concrete, 900,000 cu. yds. earth embankment, rip rap; 9 tainter gates, 2 tainter intake gates on Colorado River. **$8,500,000.** Plans deposit $30 each. CD 7/1.

August 16

†**Illinois**—U. S. Eng., 826 U. S. Court House and Custom House, St. Louis, Zone 1, Mo., clearing and snagging McKee Creek, Pike Co., Serial No. CIVENG 23-065-50-4. CD 7/20.

N. J., Clifton—City Council, Council Chamber, City Hall, widening, deepening, imprv. to stream or creek known as Weasel Brook from Center St. to Lexington Ave. Plans deposit $20. CD 10/18/45.

On or About August 23

†**Arkansas**—U. S. Eng., P. O. Box 97, Memphis 1, Tenn., riverside enlargement 460,000 cu. yds. Jackson Bayou, Levee Item No. L-134 WR, Station 26 plus 15 to Station 30 plus 8, along left bank of White River, Woodruff, Monroe and Prairie Counties, Serial No. CIVENG-40-041-50-11.

August 23

†**Colorado**—Bureau Reclamation, Dpt. Interior, Paonia, siphons and wasteway, Stations 1068 plus 03 and 1579 plus 41.5, Fire Mountain Canal, Paonia Proj., Spec. 2740. L. N. McClellan, Bldg. 1-A, Denver Federal Center, Denver, Colo., ch. engr.

†**Montana**—Bureau Reclamation, Dpt. Interior, Columbia Falls, clearing part Hungry Horse Reservoir site, Hungry Horse Proj., 25 to 5 mi. southeast of Columbia Falls, on Forest Services Spotted Bear Rd., Spec. R1-HH9.

†**Oregon**—U. S. Eng., 19 East Poplar St., Walla Walla, Wash., furnishing, installing miter gate, appurtenances, operating machinery, stop logs and stop-log lifting beams for the navigation lock at McNary Dam, on Columbia River, Serial No. CIVENG-45-164-59-4.

†**Utah**—Bureau Reclamation, Dpt. Interior, Provo, construct Murdock Diversion Dam and Provo Reservoir Canal, station 2 plus 86.37 to station 5 plus 55, Deer Creek Div. Provo River., approx. 6 mi. north of Provo. Spec. 2741. adv. ENR 8/4.

August 24

†**Utah**—Bureau Reclamationu, Dpt. Interior, Provo, construct Duchesne Diversion Dam and sluiceway and Duchesne Tunnel and tunnel intake, Provo River Proj., approx. 30 mi. east of Reber Spec. 2745. CD 8/23.

On or About August 26

†**Missouri** — U. S. Eng., 1709 Jackson St., Omaha, Neb., agriculture levee unit L 550, Sects 2 to 9 inclusive, along left bank of Missouri River, from mouth of Nishnabotna River to Brownville Bridge, Atchison Co., Serial No. Eng. 25-066-50-23.

August 30

†**O., Cincinnati**—U S. Eng., 830 West Broadway, Louisville, 3, Ky., construct recorder wells and alterations and repairs at Pump Stations and Gates. Serial No. CIV-ENG-15-029-50-5. CD 4/28, under LB

†**Wisconsin**—U S. Eng., 428 Federal Bldg., Milwaukee, Zone 1, revetment reconstruction at Sturgeon Bay and Lake Michigan Ship Canal.

LOW BIDDERS

†**Kentucky**—U. S. Eng., P. O. Box 1070, 303 U. S. Court House 7 Ave. and Broadway, Nashville, Tenn., June 1, furnish and deliver fine and coarse aggregates, Wolf Creek Dam. Serial No. Eng. 40-058-49-93, from Cumberland Quarries Inc., Illinois Bldg., Indianapolis, Ind., **$279,000.**

●†**Nebraska** — Bureau Reclamation, Dpt. Interior, Superior, July 14, earthwork, concrete canal lining, and structures for Courtland Canal, station 1 plus 87.3 to 772 plus 00, south of the Republican River in vicinity of Guide Rock and Superior, Missouri River Basin Proj. Bostwick Div. Spec. 2707 from J. A. Terteling & Sons, Inc., 4011 Fairview Ave., Boise, Idaho, **$1,265,951.** CD 6/21.

Tex., Crystal City—Zavalla-Dimmit Counties Water Imprv. Dist. 1, Crystal City, rejected bids July 22, extens. to Upper Dam and Spillway and also to Boynton Dam and spillway. **$40,000.** CD 7/12.

CONTRACTS AWARDED

†**Nebraska**—Bureau Reclamation, Dpt. Interrior, Indianola, clearing Medicine Creek Reservoir Site, Part 2, Frenchman-Cambridge Unit, Missouri River Basin Proj. Spec. R7-62 (Region 7) to Knapp Bros. and Albert Johnson, Oxford, Kan., **$29,380.** Bids 6/23. Awarded 7/18. CD 5/23.

●†**Nebraska**—Bureau Reclamation, Dpt. Interior, Trenton, construct Trenton Dam fdn., Frenchman-Cambridge Unit, Missouri River Basin Proj., Spec. 2689 to Marshall, Haas & Royce, Belmont, Calif., **$1,626,250.** Bids 6/29. Awarded 7/15. CD 7/7. under LB.

Tex., Llano—Llano Soil Conservation Dist., Llano, terracing, drainage, revetments. Own forces. **$80,000.** CD 4/18.

AIRPORTS AND AIRBASES

BIDS ASKED

August 16

Kan., Paola and Osawatomie — AIRPORT IMPRVS. — Cities of Paola and Osawatomie, c/o city clk., Osawatomie, airport imprvs., between cities, incl. 66,600 cu. yd. excavation, 1,140 lin. ft. 24-in. pipe, 14,000 lin. ft. fencing, sewer sys., administration bldg., $50,000. H. R. Hunter, 105 W. English St., Wichita, engrs. Extended date. CD 1/27.

August 19

†**Mich., Selfridge Air Force Base** — MOTION PICTURE THEATRE — U. S. Eng., 520 Merchandise Mart, Chicago, Zone 54, Ill., motion picture bldg., incl. dismantling and demolition bldg. T 164, Selfridge Air Force Base, Serial No. Eng. 11-032-50-3.

Mich., Selfridge Air Force Base—CRASH TRUCK STATION—U. S. Eng., 520 Merchandise Mart, Chicago, Zone 54, Ill., crash truck station and appurtenant work, Serial No. Eng. 11-032-50-4.

PUBLIC BUILDINGS

BIDS ASKED

August 9

N. Y., Massapequa—SCHOOL—Bd. Educ., Union Free School Dist. No. 23, Massapequa, grade school. $850,000. Extended date. Knappe & Johnson, 368 E. 149 St., New York, archts. CD 7/13.

†**North Dakota**—RELOCATING HOUSES—U. S. Eng., Fort Lincoln, P. O. Box 300, Bismarck, relocation of prefabricated houses from Fort Lincoln to Riverdale. Serial No. Civeng 32-015-50-1.

August 10

Mass., Winthrop—HOUSING—Town Housing Auth., E. R. Thomas, chn., Town Hall, veterans housing proj., incl. 24 units, row houses, Sunset Rd., 49 units, single and duplex residences, Main St. site, $726,000. A. G. Manaselian & Assoc., 30 Huntington Ave., Boston, archts. CD 12/15.

August 11

Mass., Newton—SCHOOL—City, Park School Dt., City Hall, 2 story, brick Oak Hill Veterans Memorial Elementary school, $650,000. Plans deposit $20., Collens, Willis & Beckonert, 20 Newbury St., Boston, archts. CD 2/16.

August 12

Kan., Garnett—HOSPITAL—Anderson Co., Garnett, brick, concrete county hospital bldg., Approx. $300,000. Thomas W. Williamson & Co., National Bank of Topeka, Bldg., Topeka, archts. Extended date. CD 3/2.

August 16

†**Washington**—RESIDENCES, etc.—Bureau Reclamation, Dpt. Interior, Ephrata, repairing, remodeling 2 residences, erecting shop and storage bldgs., domestic water supply and sewage systems, rein.-con. grav. surf. Gate Tenders Plot, South Coulee Dam, Columbia Basin Proj., Spec. R-1CB-2, (Region 1), L. N. McClellan, ch. engr. Bldg. 1-A, Denver Federal Center, Denver, Colo.

August 23

●**Ala., Florence**—SCHOOL—City, Florence, high school, $1,000,000. Plans deposit $50. Charles H. McCauley, Jackson Bldg., Birmingham, archt. CD 7/6. Extended date.

O., Kent—ARTS BLDG.—Pub. Wks., State Office Bldg., Columbus, 1 and 2 story, bsmnt, 190x222 ft. steel frame applied arts bldg., Kent State University. $930,000. Plans deposit $25 general. $19 mechanical. Fulton, Krinsky, Delamotte, 6014 Euclid Ave., Cleveland, archts. CD 4/14.

August 25

●**Ill., Quincy**—CITY HALL, COURT HOUSE—Adams County Bd. Superv., City, Quincy, 4 story, brick, concrete, steel, stone city hall and court house, **$1,000,000.** Holabird, Root & Burgee, 180 N. Wabash St., Chicago, archts. CD 10/23/45.

N. C., Durham — APARTMENTS, CLASSROOM BLDG.—At office pres. of North Carolina College for Negroes, Durham, faculty apartments, classroom bldg. Plans deposit $20 general. $10 mechanical. R. R. Markley, Durham, archt.

August 26

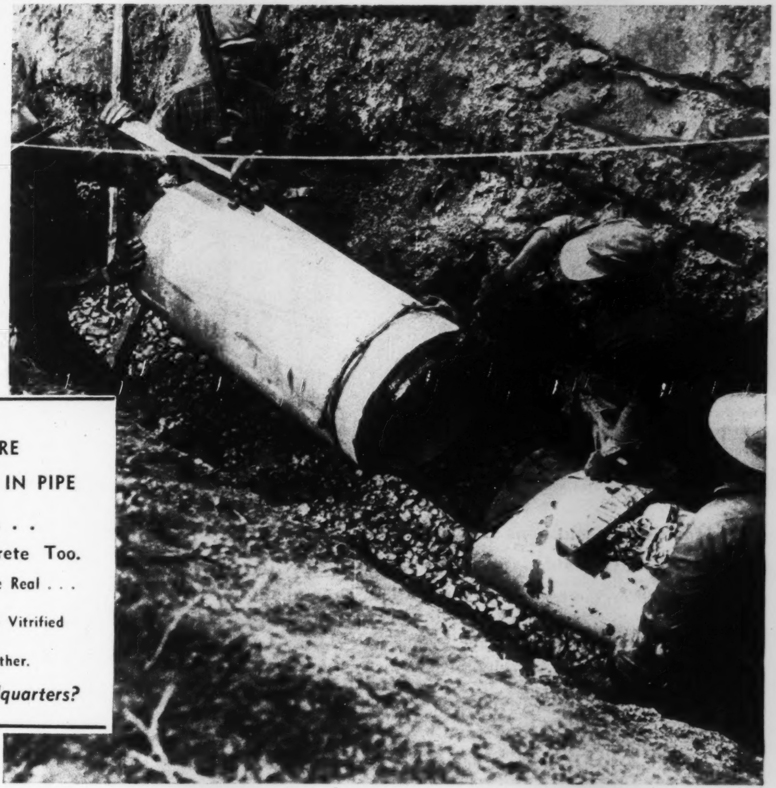
Tex., Prairie View—DORMITORY—Agricultural & Mechanical College of Texas, 228 Administration Bldg., College Station, 31,000 sq. ft. masonry girls dormitory, concrete slab fdn. steam heating. $300,000. Plans deposit $15. Carlton W. Adams, c/o owner, archt. CD 5/24 under Prairie View College.

August 29

Ill., Murphysboro — SCHOOL — Bd. Educ., School Dist. 11, Jackson Co., c/o Twp. High School Bldg., brick, concrete gymnasium and shops addn., to Murphysboro Twp. High School, McCoy & Wilson, 1108½ Main St., Mount Vernon, archts. CD 1/17.

In August

●**N. Y., Addison**—SCHOOL—Central School Dist. 1, Addison, school addn. and bus garage. $800,000-$1,000,000. Roswell E. Pfhol, 187 Niagara Square, Buffalo, archt. CD 6/23/47.



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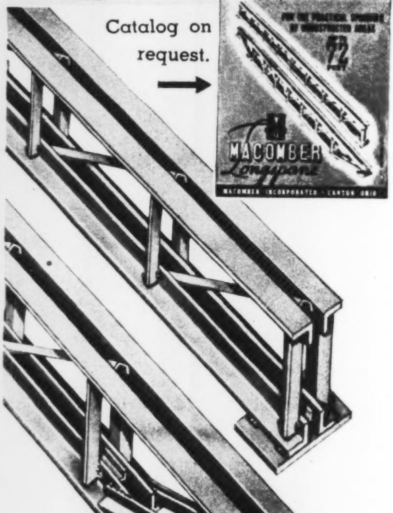
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About September 1

Tex., Denton—DORMITORY—Texas State College for Women, L. H. Hubbard, pres., Denton, 3 story masonry dormitory for college, $650,000 and 2 story masonry home economics bldg., $650,000. Preston M Geron, 905 Neil P. Anderson Bldg., Ft. Worth, archt. CD 6/28/48.

September 1

●**Kan., Merriam**—SCHOOL—Shawnee Mission High School Dist., Merriam, school addns. and alterations, **$2,500,000.** Marshall & Brown, 114 W. 10 St., Kansas City, Mo., and Perkins & Will, 309 W. Jackson Blvd., Chicago, Ill., archts. CD 5/16.

About September 15

†**S. C., Columbia**—REGIONAL OFFICE—Pub. Bldg. Admin., General Services Admin., 18 and F Sts. N. W. Wash. 25, D. C., 5 story L shaped 48x173 ft. brick and tile, Veterans Admin. Regional Office Bldg., Assembly and Laurel Sts. Est. $1,400,000-$1,600,000. CD 4/26/48.

September 20

Kan., Wichita—SCHOOL—Bd. Educ., L. E. Wilbur, secy., treas., Administration Bldg., 428 S. Broadway, Zone 2, brick, concrete intermediate school, 17 and Volutsia Sts., $260,000. Overend & Boucher, Brown Bldg., archt., CD 6/16.

LOW BIDDERS

●†**Ala., Tuskegee**—HOSPITAL ADDN.—Veterans Admin., Munitions Bldg., Wash 25, D. C., July 26, 100 bed General-Medical-Surgical Hospital addn., from Batson-Cook, West Point, Ga., **$1,155,788.** CD 6/3.

Fla., Quincy—HOSPITAL—Gadsden Co., Quincy, rejected bids June 28, 60 bed hospital, L. B., **$858,700.** CD 7/6, under LB.

Idaho, Blackfoot—HOSPITAL—State Dpt. P. Wks., Boise, July 19, general contract patients bldg., at State Hospital South, from Arrington Constr. Co., Idaho Falls. **$329,500.** CD 7/12.

Ill., Lincoln—POWER PLANT—State of Illinois, Springfield, July 19, general contract power plant, Lincoln State School and Colony, from R. B. Evans Constr. Co., 441 N. Walnut St., Springfield, **$411,348.**

●†**Ky., Louisville**—HOSPITAL—Veterans Admin., Vermont Ave., between K and I Sts., N. W., Wash. 25, D. C., July 19, general medical surgical hospital, from Virginia Engrg. Co. Inc., Newport News, Va., **$6,990,000.** CD 5/20.

†**N. M., Las Cruces**—ECHELON SHOP—U. S. Eng., P.O. Box 1538, Albuquerque, July 21, 2nd echelon shop, White Sands Proving Grounds Inv. No. Eng-29-005-49-113 from Ponsford Bros., 914 E. Missouri St., El Paso, Tex. **$134,700.** CD 7/6.

N. C., Wilson—POWER PLANT IMPRVS.—Town, L. Faulkner, mayor, Wilson, July 14, power plant imprvs. Sec. 1 constr. addns., alterations to existing turbine room, incl. fdns. from Crain & Denbo, Inc., Durham, **$124,860.** Wm. C. Olsen, 6 Exchange Pl., Raleigh, engr.

Okla., Lawton—HOSPITAL—Comanche Co., Lawton, July 21, 4 story county memorial hospital from J. J. Bollinger Constr. Co., P.O. Box 1333, Dallas, Tex., **$673,200.** Est. $953,000. CD 7/5.

Tex., Houston — HIGH SCHOOL — Houston Independent School Dist., 1600 Washington St., July 14, John Reagan Senior High School from Farnsworth & Chambers Inc., P.O. Box 74, **$568,382.** CD 6/30.

CONTRACTS AWARDED

●**Ill., Chicago**—TUBERCULOSIS HOSPITAL—State of Illinois, Springfield, 8 story brick, steel, rein.-con. tuberculosis hospital, to J. L. Simmons Co., 185 N. Wabash Ave., **$2,982,644.** Bids 6/21. Awarded 7/25. CD 6/20.

Mass., Norton—SCHOOL—Town, Bd. Selectmen, Town Hall, 2 story, bsmnt., brick, steel, concrete elementary school, to J. L. Marshall & Sons, 560 York Ave., Pawtucket, R. I., **$325,000.** Bids 6/30.

●†**N. J., Trenton**—LABORATORY, etc.—Yards & Docks Annex, Navy Dpt., Arlington, Va., Naval Aeronautical Laboratory, shop, river pumping station, boiler house and misc. constr., to Belli Co., Broad St. Bank Bldg., **$2,233,300.** Bids 7/14, awarded 7/26. CD 6/29.

N. C., Durham—HIGH SCHOOL—Bd. Educ., L. S. Weaver, supt., Durham, Negro High School to Crain & Denbo, Durham, **$526,890.** Bids 6/28. CD 7/11, under LB.

R. I., Providence—STATE BLDG.—State, F. A. Adams, State House, altering 6 story 60x85 ft. State House sect. from Masonic Bldg. to State Bldg., Fountain St. to E. Turgeon Constr. Co., Inc., 614 Turks Head Bldg., **$538,590.** Oresto Di Saia, 40 Fountain St., archt. CD 8/8/45.

Tenn., Maynardville—HIGH SCHOOL—Union Co. Bd. Educ., Maynardville, Horace Maynard High School to Emory & Richards, Corner Central and Quincy Sts., Knoxville, **$310,889.** Bids 7/12. CD 7/18, under LB.

Tex., Houston — SCHOOL — Houston Independent School Dist., 1600 Washington St., elementary school 3756 University Blvd. to Marshall Constr. Co., 2301 Telephone Rd., **$281,100.** Est. $300,000. Stayton Nunn, 2017 W. Gray St., co-ord. archt., George & Able Pierce, 4511 Kyle St., archt., W. P. Moore, 4605 Montrose Blvd., H. E. Bovey, Jr., Niels Eperson Bldg., consult. engrs. CD 6/23/47.

Newfoundland, St. Johns—HOUSING—Central Mortgage & Housing Corp., St. Johns, 50 houses, first section 300 unit project to Horwood Lumber Co. Ltd., St. Johns. Approx. **$350,000.** J. H. Brown, c/o owner, engr. CD 2/11.

N. S., Musquidoboix Valley—HIGH SCHOOL—Province of Nova Scotia, Dpt. Educ., Halifax, high school, to Annapolis Valley Constr. Co. Inc., Wolfville. Approx. **$350,000.** CD 8/25/47.

COMMERCIAL BUILDINGS

BIDS ASKED

August 16

Ala., Birmingham — CHURCH — Dawson Memorial Baptist Church, c/o George P. Turner, archt., American Life Bldg., 3 story 78x161 ft. church. Extended date. CD 7/19.

Ont., Ottawa — CHURCH — A. Martineau, archts., 200 Bay St., rein.-con. stone church, for Roman Catholic Parish of St. Mary, 199 Bayswater Ave., $300,000. CD 7/12.

August 19

N. C., Charlotte — CHURCH — Walter Hook & Assoc., archt. 303½ W. 4 St., church for Myers Park Baptist Church, 1900 Queens Rd., Plans deposit $25. CD 4/26/48.

August 25

Ala., Anniston—BLDG.—Y. M. C. A. c/o Van Keuren, Davis & Co., archts., American Life Bldg., Birmingham, Y. M. C. A. Bldg., $350,000. CD 3/16.

Bids Asked

Ill., Chicago—SCHOOL—American School of Baking, 1135 W. Fullerton St., 1 and 2 story, brick, steel, concrete, stone baking school, $500,000. Skidmore, Owings, & Merrill, 100 W. Monroe St., archt. CD 5/27.

Ill., Chicago — APARTMENTS — Owner c/o Lowenberg & Lowenberg, archts., 111 W. Monroe St., 5 story, brick apartment, incl. 60 suites.

O., Cincinnati — APARTMENTS — Wm. C. Jungclass, 740 Lafayette Ave., ten 3 story bsmnt., brick apartments at Deer Park. **$600,000.** Wilbur Firth, 3778 Isabella Ave., archt.

SOON LETS CONTRACT

Ill., Park Forest — SCHOOL — St. Irengeus Parish, c/o E. J. Belli, archt., 8 S. Dearborn St., Chicago, soon lets contract 1 story, 100x265 ft. brick school.

N. C., Reidsville — OFFICE — Southern Bell Telephone & Telegraph Co., 51 Ivey St. N.E., Atlanta, Ga., soon lets contract, dial and toll office bldg. J. N. Pease & Co. Inc., 119½ E. 5 St., Charlotte, engrs. and archts. CD 7/12.

Tex., Kerrville — SANCTUARY — First Baptist Church, c/o Rev. D. A. Bryant, pastor, Kerrville, soon lets contract, 1 story sanctuary, 2 story educational bldg., brick with cast stone trim constr. **$250,000.** Birch Easterwood, 305 Bewley Bldg., Fort Worth, archt.

Wis., Milwaukee — CHURCH, etc. — St. Gerard's Roman Catholic Church 3027 S. 17 St., Zone 7, soon lets contract 1 story, bsmnt. 34x67 ft. concrete, steel, brick church and 2 story bsmnt. 53x126 ft. school addn., steam heating, **$275,000.** Francis S. Gurda, 733 W. Mitchell St., Zone 4, archt. Extended date. CD 7/12.

LOW BIDDERS

Fla., Tallahassee — SHOPPING CENTER — Mr. and Mrs. Frank Johnson, c/o James A. Stripling & Assoc., archts., Child Bldg., July 18, shopping center, from Stones & Gandy, 308 N. Monroe St., Tallahassee, **$380,218.** CD 7/1.

●**Ia., Davenport** — HOSPITAL -- St. Lukes Hospital, Bert Dow, chn. Bd. Trustees, Davenport, rejected bids June 1, 5 story, brick, rein.-con. hospital addn., **$1,500,000.** S. G. Erikson, c/o Schmidt, Garden & Erikson, 104 S. Michigan Ave., Chicago, Ill., archts. CD 5/19.

Mass., Boston—INFIRMARY—Massachusetts Eye & Ear Infirmary, 243 Charles St., July 19, hospital addns. and alterations, 243 Charles St., from Sawyer Constr. Co., 31 St. James Ave., **$520,950.** Est. $500,000. CD 7/5.

CONTRACTS AWARDED

Ill., Addison — OLD PEOPLES HOME — Chicago Archdiocese, 919 N. Wabash St., 1 and 2 story 70x425 ft. and two 45x150 ft. wings, steel, brick Italian Old Peoples Home, to Parkside Constr. Co., 2016 N. Parkside Ave., Chicago, **$509,000.** Est. $2,000,000. Frank J. Serpico, 490 Milwaukee Ave., Zone 30, Chicago.

Ill., Chicago — SCHOOL — St. Benedict Parish, 2215 Irving Park, 3 story, 95x115 ft. brick, steel, concrete school addn., to L. J. Graf Constr. Co., 700 N. Michigan Ave., Hermann J. Gaul & Son, 228 E. Superior St., archt.

Ill., Chicago — APARTMENT — Erwin E. Cowen, c/o Triplex Bldg. Co., 2165 N. Western St., two 3 story brick apartments to Kay Constr. Co., 452 W. Chicago Ave., Approx. **$285,000.** M Alper, 8 S. Dearborn St., archt.

Ia., Burlington — HOSPITAL — Mercy Hospital, c/o supt., Burlington, general contract, brick, concrete hospital, to Carl A. Nelson, & Co. Inc., P. O. Box 532, Burlington, **$330,056.** Morgan-Gelatt & Assoc., 218 Farmers & Merchants Bank Bldg., archts. Bids 5/12.

●**La., New Orleans** — SHOPPING CENTER — Shelby Constr. Co., Inc., 4320 Paris Ave., New Orleans, shopping center, for Parkchester subdivision. Owner builds. **$1,000,000.**

Md., Baltimore — OFFICE — Federal Savings & Loan Assn., 19 E. Lexington St., 4 story, 79x110 ft. brick steel, concrete, office, Fayette and St. Paul Sts., to John McShain, 3 W. Franklin St., **$782,200.** Bids 7/19. Awarded 7/22. CD 7/12.

Miss., Biloxi—APARTMENTS—W. B. Leedy & Co., c/o T. P. Watkins, mgr., Biloxi, 64 apartments units. Owner builds, **$425,000.**

●**Miss., Jackson** — APARTMENTS — Raymond Road Gardens, c/o contractor, 284 apartment units, to Realty Constr. Co., 207 S. 18 St., Birmingham, Ala., **$1,850,000.**

N. Y., New York — HOSPITAL — Montefiore Hospital, Gun Hill Rd. and Bainbridge Ave. hospital addn. to Sheppard-Pollak, Inc., 18 E. 48 St., Zone 17. Approx. **$500,000.** Bids 4/18. CD 3/30.

●**N. Y., New York** — MEETING HALL, COUNCIL CHAMBERS — United Nations Headquarters Planning Office, 405 E. 42 St., Zone 17, structural steel for Meeting Hall and Council Chambers Bldg. in permanent world headquarters to American Bridge Co., 71 Broadway, Zone 4. **$2,225,000.** CD 1/8/47.

N. C., Rockingham — OFFICE — Southern Bell Telephone & Telegraph Co., Hurt Bldg., Atlanta, Ga., dial and toll office bldg. to Frank H. Conner Co., 711 S. Tryon St., Charlotte. Bids 6/28. CD 6/15.

N. D., Fargo—HIGH SCHOOL—Most Rev. Leo F. Dworschak, auxiliary bishop, 608 Broadway, high school to T. F. Powers Constr. Co., 217 4th Ave. N. **$344,948.** Bids 7/20. CD 7/14.

R. I., East Providence—CHURCH—Sacred Heart Roman Catholic Parish, F. P. Keough, Bishop, 22 Fenner St., Providence, 1 story bsmnt., 65x160 ft. brick, steel, limestone church, Taunton Ave. to H. V. Collins, 7 Dyer St., Providence. Approx. **$250,000.** CD 2/16/48.

R. I., Providence—APARTMENTS—Manning Gardens, Inc., c/o George J. Cavalieri, archt. 370 E. 149 St., New York, N. Y., 3 story irregular shaped, brick and concrete garden apartments, E. Manning St. Owner builds. **$300,000.** CD 5/16.

●**S. C., Charleston** — APARTMENT — Sergeant Jasper, Inc., 90 Broad St., 14 story apartment to Skinner & Ruddock, King St. extens. Approx. **$2,500,000.** Awarded 7/25. CD 7/25.

S. C., Pendleton—HOMES—Pendleton Homes, Inc., 88 Broad St., Charleston, 50 brick veneer homes to Construction Service Co., 10 Court House Square, Charleston. **$300,000.** Awarded 7/23.

Ont., Ottawa—STORE—F. W. Woolworth Co. Ltd., 357 Bay St., Toronto, 1½ story bsmnt., 155x200 ft. concrete, steel, brick store to Richard & B. A. Ryan Ltd., 1808 William St., Montreal, Que. Approx. **$400,000.** CD 11/9/44.

Ont., Port Erie—HOUSING—Jack Bastow, 86 St. Paul St., St. Catherines, 48 housing units, Upper Highland Ave., Own forces, Approx. **$350,000.**

Ont., Toronto—OFFICE—High Park Properties, M. S. Soules, pres., 880 Bay St., 2 story, bsmnt., rein.-con., steel, brick office, Kennedy Park Rd., and Bloor St. W., to Soules Constr. Ct., 880 Bay St., Toronto, Approx. **$250,000.** C. B. Dolphin, 880 Bay St., Toronto, archt.

Ont., Toronto — APARTMENTS — Calgord Constr. Co. Ltd., 43 Adelaide St. E., seven 4 story bsmnt., concrete, brick apartments, thirteen 20x130 ft. garages, Queen St. E., near Fallingbrook Ave., (Scarborough) Own forces, Approx. **$800,000.**

Que., Cowansville—CHURCH—Parish of Ste. Therese de l'Enfant Jesus, Rev. A. Petir, cure., Cowansville, 58x189 ft. concrete, frame church to Roland Desourdy, Cowansville, Approx. **$325,000.** A. CD 5/20.

Que., Montreal—GYMNASIUM—McGill University, Sherbrooke St., Montreal, 100x200 ft. concrete, steel, brick gymnasium, swimming pool, to Ross & Anglin Ltd., 4400 W. Ste. Catherine St., Montreal, **$625,000.** Bids 5/6. CD 4/19.

Que., Montreal—SCHOOL—Roman Catholic School Comn., 117 Ste. Catherine St. W., 2 story, bsmnt., 65x190 ft. concrete, brick Canadian Martyre School, Parthenais St. to Quemont Constr. Inc., 285 Bernard St., **$275,000.** E. A. Doucat, 2245 E. Sherbrooke St., archt. CD 3/29/46.

●**Que., Montreal** — OFFICE — Society of Artisans Canadian Francois, 930 St. Denis St., 190x250x261 ft. office, Craig St., to D. Boileau Ltd., 705 Beaumont Ave. Approx. **$3,000,000.** H. S. Lavelle, Kelvin Ave., Outremont, archt.

Que., Nominingue—Rev. Sisters Ste. Croix, Mother House, St. Laurent, Montreal, 4 story, bsmnt., 48x75x171 ft. L-shaped, rein.-con., domestic science school, refectories, dormitories, music rooms, recreation hall, etc., to Damien Bolleau, Ltd., 705 Beaumont Ave., Montreal, Approx. **$700,000.** H. J. Doran, 1010 St. Catherine St. W., Montreal, archt.

INDUSTRIAL BUILDINGS

BIDS ASKED

August 9

Ont., Welland—WAREHOUSE—M. M. Dillon & Co. archts., Toronto Bank Bldg., London, 1 story, bsmnt., 70x200 ft. concrete, steel, brick warehouse, for Brewers Warehouse Co. Ltd., 19 Richmond St., Toronto, CD 5/26.

August 17

Tex., Longview — FREIGHT STATION — Texas & Pacific Ry. Co., R. J. Gammie, ch. engr., Texas and Pacific Bldg., Dallas, Zone 2, 32x400 ft. masonry, concrete, brick, block and hollow tile, stone trim, structural steel frame freight station. **$100,000.** CD 11/22.

August 18

N. J., Hawthorne—PASSENGER STATION —Erie Railroad Co., I. H. Schram, ch. engr., Erie R.R. Office Bldg., corner of 12 and Coles Sts., Jersey City, 2, constructing passenger station. adv ENR 8/4.

Bids Asked

●**Tex., Victoria**—PLANT, etc.—E. I. du Pont de Nemours & Co., du Pont Bldg., Wilmington, Del., 13 masonry, concrete, steel, metal type plant bldgs. for mfg. chemical intermediates of nylon. $10,000,000; four concrete, steel, metal type service bldgs. $400,000; excavating and concrete fdns. for 9 plant and 4 service bldgs. in connection with nylon chemical plant. $300,000. Frank R. MacKie, c/o owner, engr. CD 10/22/48.

SOON LETS CONTRACT

Mass., West Springfield—WAREHOUSE—Forbes & Wallace Inc., 1414 Main St., Springfield, soon lets contract 2 story, 160x270 ft. concrete warehouse, Heywood and Memorial Aves., Approx. $68,000. Abbott Merkt & Co., 10 E. 40 St., New York, N. Y., engrs.

O., Cleveland—BAKERY—National Biscuit Co., 449 W. 14 St., New York, N. Y., soon lets contract, bakery. **$750,000.** Alexander D. Crossett, 22 William St., New York, N. Y., archt. CD 7/27.

Ont., Leaside—FOUNDRYS—E. C. Morgan, archt., 906 Yonge St., Toronto, soon lets contract 2 story bsmnt., 100x120 and 40x52 ft. foundrys, for Pease Foundry Co. Ltd., 227 Victoria St., Toronto, Approx. $90,000.

Ont., Toronto—FERTILIZER—Canada Packers, Ltd., 220 St. Clair Ave., W., soon lets contract fertilizer bldg. addn., St. Clair Ave. near Symes Rd., $100,000.

LOW BIDDERS

N. D., Grand Forks—POWER PLANT—Minnkota Power Co-operative, Grand Forks, July 13, electrical equip. for power plant from Commonwealth Electric Co., 417 Broadway, St. Paul, Minn., **$117,880.** CD 7/11.

CONTRACTS AWARDED

●**Calif., Brea**—PLANT—Union Oil Co. of California, 617 W. 7 St., Los Angeles, 1 story, rein.-con. research plant, incl. 12 bldgs., admin., research laboratories, engineering laboratories, etc., to P. J. Walker, 3900 Whiteside Ave., Los Angeles, Approx. **$5,000,000.** Austin, Field & Fry, 23 11 W. 3 St., Los Angeles, archts.

●**Calif., East Los Angeles**—PLANT—Lever Bros., 215 W. 6 St., Los Angeles, design and construction, plant incl. group of bldgs., 2 large mfg. bldgs., office and service unit, 1 wing for soap mfg. and another wing for edible products and various service and utility bldgs., to Bechtel Corp., 3780 Wilshire Blvd., Los Angeles, **$25,000,000.** Wurdeman & Becket, 5657 Wilshire Blvd., Los Angeles, archts.

Mass., Fall River—STORAGE BLDG.—Beacon Grain Co., 92 Plymouth Ave., 1 story, 49x280 ft. brick, cinder block storage bldg., Wardell St., to J. M. Darling Jr. Co., 878 S. Main St., Approx. **$68,000.**

Mass., Fall River—SALES AND SERVICE—Rita & Fiocchi, 2641 S. Main St., 1 story, 48x75x135 ft. brick, cinder block, sales and service bldg., Bradford Ave. and Broadway, to Moss Constr. Co., County St., Somerset, Approx. **$70,000.**

Md., Baltimore—WAREHOUSE—Black & Decker Mfg. Co., Towson, 1 story, warehouse, Hillen Rd., to L. R. & G. Clyde Andrews, Riderwood, **$106,000.** Awarded 7/25.

Miss., Vicksburg—PLANT—Pyramid Constr. Co., W. L. McDowell pres., Alexandria, La., plant. Owner builds. Approx. **$75,000.**

R. I., Pawtucket—FACTORY—Pawtucket Standard Braid Co., 121 Webster St., 2 story 80x210 ft. cinder block and brick factory addn., Webster St. to Henry M. Soule, 425 Walcott St., Approx. **$70,000.** CD 10/29.

Tex., Baytown — WAREHOUSE, SHOP — Humble Oil & Refining Co., Baytown, 56,000 sq. ft. warehouse and shop to W. S. Bellows Constr. Co., 716 N. Everton St., Houston, **$726,000.** Bids 7/6. CD 7/21, under LB.

Tex., Bloomington—COTTON GIN—Farmers' Co-op Gin Co., Bloomington, addnl. cotton gin unit. Own forces. Approx. **$70,000.**

Tex., Brownsville—BULK PLANT—Humble Oil & Refining Co., Humble Bldg., Houston, bulk plant at Port of Brownsville to W. D. Ferguson & Son, Brownsville, **$140,000.**

Tex., Corpus Christi—SERVICE STATION —John L. Tompkins, Jones Bldg., auto service station, shop, display. Own forces. Approx. **$70,000.**

Tex., Dallas—INDUSTRIAL BLDG.—W. L. Smith, 1131 Dragon St., industrial bldg. to Horne & Blanchard, 1131 Dragon St. Approx. **$70,000.**

Tex., Dallas—WAREHOUSE—Williams & Wagner Constr. Co., 1523 Dragon St., warehouse. Owner builds. Approx. **$75,000.**

Tex., Denison — AUTO SERVICE, SHOP — George C. Stratton, Denison, auto service, shop, display. Own forces. Approx. **$70,000.** John Hall Brown, Sherman, archt.

Tex., Fort Worth—PLANT—Marine Aircraft Corp., c/o L. C. McCarty, Jr., Lake Worth St., remodeling and addns. to aviation plant at Old Marine Base. Own forces. Approx. **$70,000.**

Tex., Fredericksburg—PACKING SHEDS—Simon J. Burg & Assoc., Stonewall, fruit packing sheds. Owner builds. Approx. **$75,000.**

Tex., Galveston—SALES, SERVICE—Happy Alexander, J St., auto shop-sales. Own forces. Approx. **$75,000.** CD 1/7.

Tex., Galveston — PLANT—Pittsburgh Plate Glass Co., 2311 Mechanic St., remodeling, expanding glass plant. Own forces. Approx. **$75,000.** Ben Milam, Guaranty Bldg., archt.

Tex., Goliad—FACTORY—Larry McDougal, Goliad, reconstruct 2 story factory. Own forces. Approx. **$75,000.**

Tex., Jacksonville — FACTORY — Peacock Crate & Basket Factory, Jacksonville, reconstruct crate factory, purchase and hire, **$77,000.** CD 8/23/48.

Tex., Livingston—MILL—Thornton Lumber Co., Livingston, reconstruct saw mill. Own forces. Approx. **$75,000.**

●**Tex., Spearman**—PLANTS, etc.—Phillips Petroleum Co., Bartlesville, to Starker Constr. Co., Spearman, addnl. imprvs. and expans. of refinery known as Sherman Plant. **$2,225,000;** gasoline plant unit, **$2,600,000;** steam boiler plant, **$475,000;** gasoline and products storage, **$125,000.** Grand total $5,425,000. CD 2/11/48.

W. Va., Charleston—GARAGE, SERVICE SHOP—Charleston Transit Co., c/o Greife & Daley, archts., Payne Bldg., vehicle garage and service shop to George A. Fuller Co., Munsey Bldg., Wash., D. C. Approx. **$600,000.** CD 12/27 under LB.

Wis., Kenosha—PLANT ADDN.—Nash Motors Div. of Nash-Kelvinator Corp., Kenosha, 1 story, 250x362 ft. steel, brick, auto plant addn., concrete fdn. and floor, to Permanent Constr. Co., 4200 N. 3 St., Milwaukee, Zone 12, Approx. **$600,000.** CD 8/4/48.

●**Wis., Milwaukee**—PLANT ADDN.—Nash Motors Div., Nash-Kelvinator Corp., Kenosha, 1 and 2 storys, 122x648 and 122x335 ft., brick, steel, concrete automobile plant addn., steam heating, to Meredith Bros., Inc., 121 E. Washington St., Milwaukee, Zone 4. Approx. **$1,500,000.**

Ont., London—PLANT—Gair Co. of Canada Ltd., 745 York St., 2 story, 80x375 ft., and 1 story 45x80 ft. steel, rein.-con. plant addn., to Canada Constr. Co. Ltd., 131 de Forest Rd., Toronto, Approx. **$400,000.** M. M. Dillon & Co., Bank of Toronto Chambers, engrs. CD 6/23.

Ont., Timmins—RAILROAD BLDG.—Ontario Northland Transportation Comn., North Bay, 476x878 ft. concrete, steel brick Railway Communications Bldg., to Hill-Clark-Francis Ltd., 86 Pine St. S., Approx. **$100,000.** T. D. Saunders, c/o owners, engr.

Ont., Toronto—FACTORY—Pendrith Mchy. Co. Ltd., 775 King St., factory addn., to Chestnut McGregor Ltd., 96 W. Bloor St. Approx. **$70,000.** West & Switzer, 43 Victoria St., archts.

Ont., Toronto—FACTORY—Quality Record, Ltd., 4 Albert St., 120x200 ft., concrete, steel, brick, factory on Birchmont Rd., to W. Holliday & Co., Inc., 271 Forest Hill Rd., Approx. **$100,000.** Stanford & Wilson, 6 Sulton St., archts.

Ont., Toronto—FACTORY—Universal Paper Products Co. Canada, 355 Logan Ave., 2 story concrete, steel, brick factory Danforth Rd., to Dritzer & Conforze Co. Ltd., 19 8 Dufferin St., Approx. **$90,000.**

Que., Montreal—PLANT—Canada Packers Ltd., 1260 Mill St., plant addn., to Cecil Carpenter & Co. Ltd., 5139 Decarie Blvd., Approx. **$100,000.** CD 8/8/46.

Que., Montreal—FACTORY—Canadian Lace Products, 934 Ste. Catherine St. E., factory, Jeanne d'Arc St., to R. M. Clark Co. Ltd., 2045 St. James St. W., Gascon & Parent, 934 Ste. Catherine St. E., archts.

UNCLASSIFIED

BIDS ASKED

August 11

Georgia—RURAL DISTRIBUTION LINES—Flint Electric Membership Corp., Reynolds, 215.99 mi. rural distr. lines in Taylor, Schley, Crawford, Talbot, Muscogee and Marion Counties. Plans deposit $25. Southern Engineering Co., 699 Spring St, N. W., Atlanta, engr. CD 4/21.

August 17

Colo., Denver—STADIUM—T. B. Campbell, mgr., Imprvs. and Parks, City and Denver Co., City and County Bldg., West Colfax Ave. and Bannock St., Denver Municipal Stadium, 44 St. and 46 Ave. Plans deposit $100. Roland L. Linder, 507 Insurance Bldg., Denver, archt. Extended date. CD 7/12.

South Carolina—SPILLWAY GENERATING STATION — South Carolina Public Service Auth., Moncks Corner, construct spillway generating station, furnish materials, excavate for and construct concrete substructure and superstructure for 2,500 kva hydro-electric generating unit at existing spillway, excavate tail canal approx 450 ft. long and rip-rap banks adjacent to powerhouse structure; erect hydraulic turbine furnished by others which will drive 2,500 kva generator; construct penstock supports and erect penstock and tainter valve; install step-up transformer, switchgear and accessories; construct approx 200 ft. entrance roadway. Santee-Cooper Proj. Plans deposit $25.

About August 15

Missouri—RURAL DISTRIBUTION LINES—Southwest Electric Co-operative, R. H. Cochran, mgr., Bolivar, 488 mi. rural distr. lines Benton, Camden, Dallas, Green, Hickory and Polk Counties, Frank Horton & Co., Lamar, engrs.

August 19

†**Washington**—BOATHOUSE—U. S. Eng., 4735 E. Marginal Way, Seattle, boathouse at Lake Washington ship canal locksite. Serial No. CIVENG-45-108-50-4. Lt. Col. P. H. Symbol, dist. engr.

August 23

†**California**—TRANSMISSION LINES—Bureau Reclamation, Dpt. Interior, Box 25½ Sacramento, transmission lines, for Elverta and Perkins Line, San Joaquin Co.

†**Pa., Middletown**—SPRINKLER SYSTEMS —U. S. Eng., First and Douglas Sts., N. W. Wash. 25, D. C., installing sprinkler sys. in Bldgs. Nos. 133 and 134 at Olmstead A. F. B. Serial No. Eng-49-080-50-3-(3).

†**S. C., Dupont**—RADIO OPERATING BLDG. —at office Capt. W. T. Eckberg, Officer Charge of Construction, P. O. Box 325, Naval Base, Charleston, radio operation bldg. incl. utilities, service, pump house and equip. electric sub-station, water and sewage plant at Communications Stations, NOY 18087, Spec. No. 21920. Plans deposit $15.

August

Kansas—RURAL DISTRIBUTION LINES—Lane-Scott Electric Co-operative, Inc., Harvey C. Callender, mgr., Dighton 310 mi. rural distr. lines, Lane Co., J. C. Leavitt Co., Garden City, Engr CD 5/27.

September 8

†**Oklahoma** — GENERATORS — U. S. Eng., P. O. Box No. 61, Tulsa, Zone 2, design, mfg., delivery f. o. b. railroad cars at Gore, installation in the powerhouse and testing two 17,895 kva. alternating current generators for the Tenkiller Ferry Dam power plant on the Illinois River, near Gore. Inv. No. CIVENG-34-066-50-8.

SOON LETS CONTRACT

Georgia—RURAL DISTRIBUTION LINES—Carroll Electric Membership Corp., Carrollton, soon lets contract, 207 mi. rural distr. lines, Carroll, Haralson, Heard, Paulding and Polk Counties. Plans deposit $25. Southern Engineering Co., 699 Spring St. N. W., Atlanta, engr. CD 7/15, under LB.

LOW BIDDERS

†**Arizona-Nevada**—CIRCUIT BREAKERS—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., July 14, Schedule 1, two 161,000 volt circuit breakers for Parker-Gila Drop No. 4 tap, Davis Dam Proj., Spec. 2695, from Allis-Chalmers Mfg. Co., Continental Oil Bldg., Denver, Colo. **$65,574.** CD 6/8.

Kansas—RURAL DISTRIBUTION LINES—Coffey County Rural Co-operative Assn., J. N. Myers, mgr., Burlington, July 19, 507.81 mi. rural distr. lines, conversions, secondary lines, service drops, etc., Coffey Co., Proj., Kansas 26 Coffey Sect N. K and L, from The Weikel Constr. Co., 1150 Fairview St., Fort Wayne, Ind., **$638,873.** CD 7/13.

Mississippi—RURAL DISTRIBUTION LINES —Coastal Electric Power Co., Bay St. Louis, rural distr. lines, from Victory Electric Co. Inc., 266 St. Michael St., Mobile, Ala., **$79,734.**

Missouri—RURAL DISTRIBUTION LINES —Southwest Electric Co-operative, R. H. Cochran, mgr., Bolivar, July 21, 173.99 mi. rural distr. lines, Benton, Hickory, Camden, Dallas, Polk and Green Counties, from Franklin Electric Co., 174 Jefferson St., Franklin, Ind., **$93,766.** CD 7/13.

North Carolina — RURAL DISTRIBUTION LINES — Surry-Yadkin Electric Membership Corp., Dobson, July 19, 335.7 mi. rural distr. lines, Surry, Wilkes, Stokes, Forsyth and Yadkin Counties from Roy Richards Constr. Co., Carrollton, Ga., **$450,300.** CD 6/23.

Tex., Crystal City—STADIUM, GYMNASIUM —Crystal City Independent School Dist., Crystal City, July 22, masonry, heavy timbers, 3,500 seating stadium-gymnasium from Robert Guyler, Crystal City, **$106,985.** CD 7/22, under LB.

CONTRACTS AWARDED

Fla., Miami—STADIUM ADDN—City, Miami, 2nd Orange Bowl Stadium addn., to Joseph G. Morette, Inc., 2401 N. W. 7 St., **$188,962.** Bids 7/20. CD 7/11.

Georgia—RURAL DISTRIBUTION LINES—Pataula Rural Electric Membership Corp., Cuthbert, 77.82 mi. rural distr. lines Calhoun, Clay, Quitman and Randolph Counties, to Leo T. Barber, Moultrie, **$69,129.** Bids 7/19. CD 7/13.

Kansas—RURAL DISTRIBUTION LINES—Northwest Kansas Electric Co-operative Assn. Inc., Bird City, 157 mi. rural distr. lines, Cheyenne Co., to A. B. Reither Constr. Co., 1908 Clermont St., Denver, Colo., labor $34,031, materials, $157,000. Total **$191,031.** CD 4/26/46.

Kansas—RURAL DISTRIBUTION LINES—Western Co-operative, Electric Assn., Wakeeney, 299 mi. rural distr. lines, Trego Co., to E. L. Niehaus, Lamar, Mo., labor, $67,453. materials, $299,000. Total **$366,453.** CD 8/9.

Kentucky—RURAL DISTRIBUTION LINES—Henderson-Union Rural Electric Co-operative Corp., Henderson, 217 mi. rural distr. lines, Henderson Co. to L. P. & H. Constr. Co., Box 210, Linton, Ind., **$263,643.** Chanaberry Engr. Co., Inc., 309 S. 3 St., Louisville, engr. CD 8/23/48.

Louisiana—RURAL DISTRIBUTION LINES—Dixie Electric Membership Corp., 2900 N. Street. Baton Rouge, 43 mi. rural distr. lines, East Baton Rouge County, to R. D. Cooper Constr. Co., Box 348, Ferriday, **$61,151.** CD 1/7.

La., New Iberia—STADIUM—Iberia Parish School Bd., New Iberia, concrete stadium to J. C. McClendon, 1237 22 St., Gulfport, **$74,488.** Bids 7/13. CD 6/24.

Maryland—RURAL DISTRIBUTION LINES—Choptank Electric Co-operative, Inc., Denton, 117.2 mi. rural distr. lines, Carolina Co., to McKinley Constr. Co., Inc., Arlington, Va., **$199,293.** B. O. Vanmont Engrs., Inc., 218 W. Second St., Charlotte 2, N. C., engrs.

Michigan—RURAL DISTRIBUTION LINES—Top O'Michigan Rural Electric Co., Boyne City, 143 mi. rural distr. lines, Charlevoix Co., to Davis-Hydaker Co., Spencerville, O., labor, $53,982; materials, $143,000; total, **$196,982.** CD 3/4.

Miss., Jackson—CONDUITS—Southern Bell Telephone Co., Hurt Bldg., Atlanta, Ga., 1.5 mi. conduits, under streets, 3.5 mi. cable, 3.5 mi. overhead lines, Owner builds, **$180,000.**

Missouri — RURAL DISTRIBUTION LINES—Barton County Electric Co-operative, Henry Lehman, pres., Lamarm 117.47 mi. rural distr. lines, 35 mi. conversion work, Barton, Dade, Jasper and Vernon Counties, Proj. Mo. 28R, Barton, to E. & C. Contg. Co., Paoli, Ind., **$174,033.** Bids 6/7. CD 6/2.

Missouri—RURAL DISTRIBUTION LINES—Consolidated Electric Co-operative, Inc., Leo R. Hoer, pres., 217 W. Jackson St., Mexico, 242 mi. rural distr. lines, Audrain, Montgomery and Pike Counties, Proj. Missouri 36 P&S, Audrain, to Triple H Constr. Co.. Linton, Ind., **$282,000.** Bids 6/30. CD 6/14.

Montana—RURAL DISTRIBUTION LINES—Lower Yellowstone Rural Electric Assoc., Inc., Sidney, 392.7 mi. rural distr. lines, Richland Co. to Williston Constr. Co., Williston, labor, $125,433; materials, $392,000. Total, **$517,433.** Bids 5/4. CD 4/27.

Montana—RURAL DISTRIBUTION LINES—Sheridan County Electric Co-operative, Inc., Westby, 291.8 mi. rural distr. lines, Sheridan Co. to Sydney T. Olson, Jr., Box 249, Billings, Mont., labor, $115,499; materials, $291,000. Total, **$406,499.** Montana State Water Conservation Bd., Helena, engr. CD 5/27.

Nebraska—RURAL DISTRIBUTION LINES—Northeast Nebraska Rural Public Power Dist., Emerson, 128.4 mi. rural distr. lines, Nebraska Co. to Mork's Hardware & Electric Co., Clarkfield, Minn., labor, $39,061; materials, $128,000. Total, **$167,061.** Bids 5/12. CD 5/9.

Nebraska — PIPELINE — Parker-Simmons Drilling Corp., Casper, Wyo., oil pipe lines from Sidney, Neb., to points in Morrill, Cheyenne, Kimball, Banner, Scottbluff and Duel Counties. Owner builds. Approx. **$300,000.**

N. C., Concord—ELECTRICAL DISTRIBUTION—City, Bd. Light & Water Comrs., Concord, electrical distr. sys. imprvs. to Harrison-Wright Co. Inc., 116 W. 3 St., Charlotte, **$118,313.** Bids 6/28. CD 6/15.

North Dakota — RURAL DISTRIBUTION LINES—Slope Electric Co-operative, Inc., New England, 212 mi. rural distr. lines, Slope Co. to Hehman Constr. Co., Pelican Rapids, Minn., labor, $62,702; materials, $212,000, Total, **$274,702.** Bids 4/15. CD 4/6.

†R. I., Newport—FUEL DISTRIBUTION—U. S. Navy, Construction Officer, U. S. Naval Base, Newport, fuel distr. sys., Melville Fuel annex to Arnold M. Diamond, 50 Court St., Brooklyn, N. Y., **$170,449.** CD 6/27.

Texas—GAS LINE—Lone Star Gas Co., 1915 Wood St., Dallas, addnl. natural gas transportation line gathering sect. force-account. **$65,000.** G. H. Margus, c/o owner, engr. CD 5/16.

Alta., Edmonton—GOLF COURSE—Municipality, 18 hole golf course, own forces, **$70,000.** A. W. Haddon, city engr.

P. E. I., Charlottetown—WHARF—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., wharf reconstruction and imprvs., to Canada Dredge & Dock Co. Ltd., Harbour Commrs. Bldg., Toronto, Ont., Approx. **$721,377.** R. Blais, c/o owner, engr. CD 6/20, under LB.

Proposal Advertisements see pp. 139-141

U. S. Government

CORPS OF ENGINEERS, Baltimore District, Baltimore, Md.—Sealed bids will be received here until 11 a.m. E.D.S.T., 20 September 1949, and then opened for Construction of Veterans Administration Hospital, Quarters, Service Buildings, and Utilities, Baltimore, Maryland. Plans may be obtained by deposit of $50 per set in form of cash, CERTIFIED check or postal money order payable to The Treasurer of the United States and mailed to the District Engineer, Corps of Engineers, 24th Street and Maryland Avenue, P. O. Box 1715, Baltimore 3, Maryland. (291)

OFFICIAL PROPOSALS

Bids: September 6, 1949 (281)

Construction of Electric Elevators

THE DELAWARE MEMORIAL BRIDGE
NOTICE TO BIDDERS

Sealed proposals for the construction of electric elevators in the suspension bridge towers of "The Delaware Memorial Bridge" over the Delaware River near Wilmington, Delaware, will be received by the Delaware State Highway Department at the office of the Director, Delaware Crossing Division, Continental American Building, Wilmington, Delaware, until 11 o'clock Eastern Standard Time (12 o'clock Eastern Daylight Savings Time), September 6, 1949. Immediately thereafter proposals will be publicly opened and read in the Council Chamber, Wilmington City Hall. The work will include two elevators, one in each tower, and will be let under Contract No. 11, Tower Elevators.

Performance of the contract shall begin promptly after execution of the contract and the contract shall be completed on or before September 1, 1950.

Monthly payments will be made for ninety (90) per cent of the construction completed each month.

Bidders must submit proposals upon forms furnished by the Department.

Each proposal must be accompanied by an acceptable surety bond or certified check for a sum equal to at least ten (10) per cent of the total amount of the proposal.

The Contract will be awarded or proposals rejected within twenty (20) days from the date of opening proposals. The right is reserved to reject any or all bids.

The Plans and Specifications and other contract documents may be examined at the office of the Director, Delaware Crossing Division, and at the office of the Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, N. .Y. One complete set of the Plans and two copies of the specifications for this contract may be obtained from the Engineers after August 12, 1949 upon payment of $15.00. Any prospective bidder who has made such a deposit may secure extra blueprint copies of the Plans upon payment of 50 cents per drawing, and extra copies of the Specifications upon payment of $2.00 per copy.

All Plans and Specifications shall be returned to the Engineers, and on such return $10.00 of the above payment will be refunded. No refund will be made out of payments for extra prints of the Plans. Full refund of deposit will be made out of payments for extra copies of the Specifications. All such refunds will be made only upon return of the documents within 10 days after the opening of proposals.

State Highway Department
B: J. Gordon Smith, Chairman
W. W. Mack Director
Delaware Crossing Division
Wilmington, Delaware
July 26, 1949.

Bids: August 18, 1949 (289)

Bridges

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

ROUTE 4 PARKWAY, SECTION 2-A, BRIDGES

Construction of Route 4 Parkway, Section 2-A, Underpass at Uniontown Road and Bridge over South Branch of Rahway River in Woodbridge Township, Middlesex County. Federal Aid Project No. U-188(15). The principal items of construction are: ,

Estimated:
2,885 cu. yds. Concrete in Structures
144,375 lbs. Rein. Steel in Structures
365,700 lbs. Structural Steel
58 cu. yds. Dimension Masonry
4,945 sq. ft. Randon Masonry
5,880 lin. ft. Timber Piles
1,238 cu. yds. Channel Excavation

Bids for the above will be received at the office of the State Highway Department, Room 102, State House Annex, Trenton, New Jersey, on Thursday, August 18, 1949, at ten o'clock (10:00 A.M.—EASTERN STANDARD TIME), eleven o'clock (11:00 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

NOTE: The proposed project is a "Federal Aid Project" authorized by the provisions of Title 27 of the Revised Statutes of New Jersey and supplements and by Sections 2, 3 and 4, P. L. 521, 78th Congress, and is to be performed in accordance with the special provisions and requirements of the Bureau of Public Roads, as outlined in the specifications, which provisions require that labor be employed from lists furnished by the State Employment Service, Cor. Maple and Fayette Streets, Perth Amboy, N. J. The attention of bidders is directed to the special provisions covering subletting or assigning the contract. The minimum wage paid to all unskilled labor employed on this project shall be 65¢ per hour. The minimum wage paid to all intermediate grade of labor employed on this contract shall be 75¢ per hour. The minimum wage paid to all skilled labor employed on this contract shall be $1.25 per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 102, State House Annex, Trenton, N. J. Bids must be made upon the sandard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envolopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: Spencer Miller, Jr.
State Highway Commissioner

Bids: August 23, 1949 (290)

Filtration Plant & Reservoirs

WASHINGTON SUBURBAN SANITARY COMMISSION

CONTRACT NO. 663-W

ADDITIONAL FILTRATION PLANT UNIT AND TWO FILTERED WATER RESERVOIRS
WILLIS SCHOOL FILTRATION PLANT

Sealed proposals for furnishing and erecting, on foundations prepared by others, an additional filtration plant unit of 11.12 Mgd rating and two filtered water reservoirs, of 2.15 Mg and 2.84 Mg capacities, respectively, will be received at the office of the Washington Suburban Sanitary Commission, Hamilton Street, Hyattsville, Maryland, until Tuesday, August 23, 1949 at 1:00 P. M., Eastern Daylight Saving Time, at which place and time they will be publicly opened and read.

Plans and specifications may be obtained from the office of the Chief Engineer of the Commission, Hyattsville, Maryland, upon deposit of $10.00, which deposit will be returned to bidders or to those returning plans and specifications in good condition.

Dwight B. Galt
Warren Browning
Leland G. Worthington
Commissioners

(Continued on page 140)

OFFICIAL PROPOSALS

(Continued from page 139)

Bids Asked: (287)

Adjudication for Sluice Gates, Pipelines and Surge Tanks

ASWAN DAM HYDRO-ELECTRIC SCHEME

EGYPTIAN GOVERNMENT
MINISTRY OF PUBLIC WORKS
HYDRO-ELECTRIC POWER DEPARTMENT

The Egyptian government hereby announces that tenders are invited for the sluice gates, pipelines and surge tanks for the hydro-electric power station at the Aswan Dam.

The tender documents including conditions of contract, specification and tender drawings for the entire works may be obtained either at the Hydro-Electric Power Department, Sharia Maamal el Sukkar, Garden City, Cairo, or at the office of the consulting engineer of the Egyptian government, Kennedy and Donklin, 12 Caxton Street, London, S. W. 1., or from the Royal Egyptian legations in Washington, Paris, Stockholm, Rome, Berne and Brussels as from the 10th of August, 1949.

Tenderers must pay Le.20 (Twenty Egyptian pounds) which covers the cost of two complete sets of the conditions of contract, specifications and drawings and three sets of the schedules. This sum must be paid to the National Bank of Egypt, either in Cairo or in London, to the cretdit of the ministry of public works, or at one of the above mentioned legations, and will not be refunded.

Upon presentation of the bank receipt to either the Hydro-Electric Power Department in Cairo or the consulting engineers in London, or in payment of the required sum at one of the above-mentioned legations, as the case may be, tenderers will be supplied with the tender documents as detailed above.

When submitting their tender, tenderers must pay a provisional deposit of two per cent of the value of the contract with a maximum of le. 30,000 (thirty thousand Egyptian pounds) to the National Bank of Egypt in Cairo, or in London to the credit of the Ministry of Public Works. Letters of guarantee from approved banks will be accepted in lieu of cash. A list of approved banks is given in the specification.

Bids: August 17, 1949 (283)

State Road Work

Sealed proposals will be received by the State Highway Department at its offices, Dover, Delaware, until 1:00 P. M., E. S. T. (2:00 P. M., E. D. S. T.), August 17, 1949, and at that time and place publicly opened for contracts involving the following approximate quantities:

CONTRACT 1005
Federal Aid Project S-88 (1)
Masten Corner to Felton
Kent County
20′ Stabilized & Surface Treated Road
6.208 Mi.

1.2	A. Clearing
1.2	A. Grubbing
30,000	C. Y. Excavation
200	C. Y. Structure Excavation
1,000	C. Y. Borrow
100	C. Y. Borrow Pit Stripping
20,000	C. Y. Selected Borrow
110	C. Y. Cement Concrete Pavement
20	M. Ft. Creo. Timber Structures
66	C. Y. Cement Concrete Masonry
6,700	Lb. Reinforcing Steel
1,580	L. F. 12″ R. C. Pipe
1,350	L. F. 15″ R. C. Pipe
175	L. F. 48″ R. C. Pipe
400	L. F. 12″ Conc. Sewer Pipe
575	L. F. Timber Piles
700	L. F. Creo. Timber Piles
8	M. Ft. Sheet Piles
11	M. Ft. Creo. Sheet Piles
75	S. Y. Cement Concrete Gutter
20	L. F. Patching Present Gutter
50	L. F. Patching Present Curb
9	Each Catch Basins
1	Each Manholes
5,000	Lb. Castings
8,500	S. Y. Sodding
41,000	Gal. R. C. 1 Asphalt
41,000	Gal. R. C. 3 Asphalt
6	L. F. 6″ T. C. Pipe
30	L. F. 12″ T. C. Pipe
1,646	T. Slag Chips
1,640	T. Crushed Chips
33	L. F. Relaid 48″ R. C. Pipe
6,000	L. F. Ditching
110	L. F. 18x11″ Corr. Arch Pipe
	Removal two Bridges

Contract 1005 is a Federal Air Project and will come under the provisions of the Federal Aid Highway Act as amended.

The Employment Agency for this contract shall be the Delaware State Employment Service whose offices are located at 307 S. State Street, Dover, Delaware.

Attention is called to the Special Provisions in the proposal, specifications and contract agreement.

Performance of contract shall commence within ten (10) days after execution of the contract and be completed as specified.

Monthly payments will be made for ninety (90) per cent of the construction completed each month.

Bidders must submit proposals upon forms provided by the Department.

Each proposal must be accompanied by a surety bond, certified check, or money to the amount of at least ten (10) per centum of the total amount of the proposal.

The envelope containing the proposal must be marked "Proposal for the construction of State Highway Contract No.........."

The right is reserved to reject any or all bids.

The contract will be awarded or rejected within twenty (20) days from the date of opening proposals.

Complete sets of plans and specifications may be obtained at Room 204, State Highway Department, Dover, Delaware, after July 30, 1949 upon receipt of five dollars ($5.00) for each contract, which amount will not be refunded.

Make checks payable to the State Highway Department.

STATE HIGHWAY DEPARTMENT
By: J. Gordon Smith, Chairman.
W. A. McWilliams, Chief Engineer.
Dover, Delaware.
July 20, 1949.

CONTRACT 1059
Troop Station No. 2
Delaware State Police
DuPont Parkway near State Road
New Castle County

Sealed bids for combined General Construction, Plumbing, Heating and Ventilating and Electrical Work for Troop Station No. 2, Delaware State Police, to be erected on the DuPont Parkway near State Road, New Castle County, Delaware, will be received by the State Highway Department at its offices in Dover, Delaware, until 1:00 o'clock P. M., Eastern Standard Time, (2:00 P. M., E. D. S. T.), August 17, 1949, and then at the said offices will be publicly opened and read.

The Drawings, Information for Bidders, Form of Bid, Form of Bid Bond, Form of Contract, Form of Performance Bond, Form of Labor and Materialmen's Bond and the Specifications may be obtained after August 3rd, 1949, at the offices of the Architects upon the payment of $25.00 for each complete set. (Make checks payable to the Architects.) Any bidder for the General Contract, upon returning such set in good condition will be refunded his payment; and any non-bidder, including sub-contractor and materialmen, upon so returning such set will be refunded $10.00.

The employment agency for this contract shall be the Delaware State Employment Service, 601 Shipley Street, Wilmington 99, Delaware.

The State Highway Department reserves the right to waive any informalities in, or to reject any or all bids.

Each bidder must deposit with his bid security in the amount of not less than ten per centum (10%) of the base bid in the form and subject to the conditions provided and set forth in the Information for Bidders.

Performance of contract shall commence within ten (10) days after execution of the contract and be completed as specified.

Monthly payments will be made for ninety per centum (90%) of the construction completed each month.

Bidders must submit proposals upon the form attached to the Specifications, filled out in ink.

The envelope containing the proposal must be marked as designated in the Information for Bidders.

The contract will be awarded or all bids will be rejected within twenty (20) days from the date of opening proposals.

The right is reserved to reject any or all bids.

STATE HIGHWAY DEPARTMENT
By: J. Gordon Smith, Chairman.
W. A. McWilliams, Chief Engineer.
State Highway Department
Dover, Delaware.
George E. Pope & Albert Kruse, Architects
1108 Washington Street
Wilmington, Delaware
July 20, 1949.

OFFICIAL PROPOSALS

Bids: August 17, 1949 (286)

Grading, Drainage, Structure

PENNSYLVANIA TURNPIKE COMMISSION
Harrisburg, Pennsylvania

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania, until 10:00 A.M. (Eastern Daylight Saving Time), the 17th day of August, 1949, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room No. 1, North Office Building, State Capitol, Harrisburg, Pennsylvania, and immediately publicly opened and read aloud, for the following contract.

For construction of grading, drainage, structures, and paving of Turnpike Section 21A-1, part of the Philadelphia Extension, in Middlesex Township, Cumberland County, Commonwealth of Pennsylvania. This section being situated as follows:

Beginning at a point about 3,314 feet West of Legislative Route 34 in Middlesex Township at Turnpike Station 1331+50 (Cumberland County) thence in an Easterly direction 8,790 feet to a point about 156 feet East of Legislative Route 21011 in Middlesex Township at Turnpike Station 64+75 (Cumberland County) a distance of approximately 1.665 miles.

The approximate quantities of the principal items are as follows

Class I Excavation—387,000 cubic yards
Class II Excavation—10,800 cubic yards
Reinforced Concrete Pavement — 64,000 square yards
Class A Concrete—1,500 cubic yards
Class B Concrete—4,500 cubic yards
Plain Steel Bars—582,000 pounds
Fabricated Structural Steel — 587,000 pounds

Copies of plans, specifications and other contract documents, including cross-sections, are on file and open to public inspection at the offices of the Pennsylvania Turnpike Commission located at Harrisburg, Pennsylvania, on August 3, 1949. Copies of cross-sections may be purchased from the Pennsylvania Turnpike Commission for the sum of Fifty Dollars ($50.00) per set.

Specifications and contract documents, exclusive of cross-sections, may be obtained from the Commission upon deposit of Ten Dollars ($10.00) for each set, such deposits to be refunded in full to any actual bidder upon return of such documents in good condition within five (5) days after the date of the opening of the bids. Refund will be made for all plans, contract documents and cross-sections returned, if the project is withdrawn from letting by the Pennsylvania Turnpike Commission. Remittances are payable to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications and cross-sections.

The character and amount of bid security to be furnished by bidder is stated in the Instructions to Bidders.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

PENNSYLVANIA TURNPIKE COMMISSION
James F. Torrance
Secretary and Treasurer
Harrisburg, Pennsylvania
July 29, 1949

(Continued on page 141)

Contractors Watch This Section —

for new projects. Publish your announcements through the proposal sections of *Engineering News-Record* and get their bids.

U. S. GOVERNMENT

(Continued from page 140)

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2740) will be received by Bureau of Reclamation, Paonia, Colorado, August 23, 1949, and then publicly opened for furnishing labor and materials and performing all work for the construction of siphon at station 1068+03, and a siphon and wasteway at station 1579+41.5, Paonia Project, Colorado. The work is situated near Paonia, Colorado. Principal items are approximately: 9,600 cu. yds. excavation; 170 cu. yds. concrete; furnishing and laying 1,000 lin. ft. 48-inch and 54-inch concrete pipe; and other work. Time allowed for completion will be 225 days. For particulars, address Bureau of Reclamation, Paonia, Colorado; or Building 1-A, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner.
(279)

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2743) will be received by Bureau of Reclamation, Denver, Colorado, August 18, 1949, and then publicly opened for furnishing fabricated structural steel for Tracy switchyard, Central Valley Project, California. Delivery is desired within 210 days. For particulars, address Bureau of Reclamation, Building 1-A, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner.
(280)

Office of the District Engineer, Corps of Engineers, US Army, 1217 U. S. Post Office and Custom House, St. Paul 1, Minnesota.—Sealed bids, in duplicate, for furnishing all labor and materials and performing all work required for Upper Approach Channel Dredging, Lock and Dam No. 10, Mississippi River, Guttenberg, Iowa, will be received in this office until 11:00 A.M., C.S.T., 9 August 1949, and then publicly opened. Further information upon application.
(266)

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2746) will be received by Bureau of Reclamation, Denver, Colorado, August 19, 1949, and then publicly opened for furnishing labor and materials and performing all work for the construction of earthwork, concrete lining, tunnel, and structures for Horsetooth supply conduit, station 0+00 to station 53+88, Horsetooth Feeder Canal, station 53+70 to station 67+52 and access road, Colorado-Big Thompson Project, Colorado. The work is situated about 8 miles west of Loveland, Colorado. Principal items are approximately: 17,000 cu. yds. excavation in tunnel; 45,000 cu. yds. excavation for structures and canal; furnishing and installing 204,000 lbs. steel tunnel supports; furnishing cement and reinforcement bars and placing 4,800 cu. yds. concrete; installing 78,000 lbs. gates, hoists, and miscellaneous metalwork; and other work. Time allowed for completion will be 480 days. For particulars, address Bureau of Reclamation, Fort Collins, Colorado; or Building 1-A, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner.
(285)

OFFICIAL PROPOSALS

Bids: August 18, 1949 (284)

State Highway Work

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

ROUTE 1, SECTIONS 4E & 5A

Channelization and widening of Route 1, Sections 4E & 5A, Broadway and Wallis Avenue, Jersey City, Hudson County.

Estimated:

3,800 cu. yds. Roadway Excavation-Earth
3,800 sq. yds. 4″ Macadam Base Course
3,700 sq. yds. 4″ Mod. Pen. Mac. Inter. Course
1,537 tons Pavement, Type FA-BC
800 sq. yds. 9″ Rein. Conc. Pavement Surface

ROUTE 1, SECTIONS 8A & 9C

Channelization of Route 1, Section 8A and 9C, Danforth Avenue, Jersey City, Hudson County.

Estimated:

500 cu. yds. Roadway Excavation—Earth
1,180 sq. yds. 4″ Macadam Base Course
1,180 sq. yds. 4″ Pen. Mac. Inter. Course
130 tons Pavement, Type MA-BC-1

Separate bids on each of the above projects will be received at the office of the State Highway Department, Room 102, State House Annex, Trenton, N. J., on Thursday, August 18, 1949, at ten o'clock (10:00 A.M.—EASTERN STANDARD TIME), eleven o'clock (11:00 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualifications of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment, with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 102, State House Annex, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the names and addresses of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: Spencer Miller, Jr.
State Highway Commissioner

Bids: September 6, 1949 (282)

Grading of Highway Approaches

THE DELAWARE MEMORIAL BRIDGE
NOTICE TO BIDDERS

Sealed proposals for the grading of the highway approaches to "The Delaware Memorial Bridge" over the Delaware River near Wilmington, Delaware, will be received by the Delaware State Highway Department at the office of the Director, Delaware Crossing Division, Continental American Building, Wilmington, Delaware, until 11 o'clock Eastern Standard Time (12 o'clock Eastern Daylight Saving Time), September 6, 1949. Immediately thereafter proposals will be publicly opened and read in the Council Chamber, Wilmington City Hall. The work will be let under two separate contracts: Contract No. 12 for the East Approach Grading, and Contract No. 14 for the West Approach Grading.

The work involves the following approximate principal quantities:

Contract No. 12. East Approach Grading

Excavation	10,000 cu. yds.
Borrow	40,000 cu. yds.
Concrete Pipe	250 lin. ft.

Contract No. 14. West Approach Grading

Excavation	200,000 cu. yds.
Borrow	140,000 cu. yds.
Concrete Pipe	510 lin. ft.

Performance of the contracts shall begin promptly after execution of the contracts and contracts shall be completed on or before the dates scheduled as follows:

Contract No. 12 East Approach Grading May 1, 1950
Contract No. 14 West Approach Grading July 1, 1950

Monthly payments will be made for ninety (90) per cent of the construction completed each month.

Bidders must submit proposals upon forms furnished by the Department.

Each proposal must be accompanied by an acceptable surety bond or certified check for a sum equal to at least ten (10) per cent of the total amount of the proposal.

The Contracts will be awarded or proposals rejected within twenty (20) days from the date of opening proposals. The right is reserved to reject any or all bids.

The Plans and Specifications and other contract documents may be examined at the office of the Director, Delaware Crossing Division, and at the office of the Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, N. Y. One complete set of the Plans and two copies of the Specifications for these contracts may be obtained from the Engineers after August 12, 1949 upon payment of $25.00. Any prospective bidder who has made such a deposit may secure extra blueprint copies of the Plans upon payment of 50 cents per drawing, and extra copies of the Specifications upon payment of $2.00 per copy.

All Plans and Specifications shall be returned to the Engineers, and on such return $10.00 of the above payment will be refunded. No refund will be made out of payments for extra prints of the Plans. Full refund of deposit will be made out of payments for extra copies of the Specifications. All such refunds will be made only upon return of the documents within 10 days after the opening of proposals.

State Highway Department
By: J. Gordon Smith, Chairman
W. W. Mach, Director
Delaware Crossing Division
Wilmington, Delaware
July 26, 1949.

Bids: August 24, 1949 (270)

Sewage Treatment Plant

TOWN OF STRATFORD, CONNECTICUT
NOTICE TO CONTRACTORS

Bids will be received by the Town of Stratford on August 24, 1949, at 8:30 P.M., Eastern Daylight Saving Time, for the construction of Sewage Treatment Plant and Appurtenances, Contract XIII.

Information may be obtained at the offices of Bowe, Albertson & Associates, Engineers, 110 William Street, New York, New York, and at the office of the Town Manager, Town Hall, Stratford, Connecticut, between the hours of 10 A.M. and 4 P.M. daily except Saturdays, Sundays and holidays.

TOWN OF STRATFORD,
CONNECTICUT
By: Harry B. Flood,
Town Manager
DATED, June 29, 1949.

Bids: August 18, 1949 (264)

NOTICE TO CONTRACTORS
ERIE RAILROAD COMPANY—OWNER

Sealed bids will be received by Mr. I. H. Schram, chief engineer of the Erie Railroad Company at the Erie Railroad Office Building corner of 12th & Coles Streets, Jersey City 2, New Jersey until 2:30 o'clock P. M. (D.S.T.) August 18, 1949, and then at the said office publicly opened and read aloud, for the construction of a passenger station at Hawthorne, N. J.

The passenger station will be a building 37′x20′ constructed of concrete block with brick facing. The work will include installing plumbing, heating and electric systems, fuel oil storage tanks and the installation of water and drainage lines.

The letter of transmittal, form of bid, form of contract, specifications and accompanying plans may be examined at the office of Mr. H. A. Pasman, resident engineer, Erie Railroad Company, 168 Provost Street, Jersey City, N. J., or at office of chief engineer, Erie Railroad Company, Room 700 Midland Building, Cleveland, Ohio.

The Erie Railroad Company reserves the right to waive any informalities in or to reject any or all bids. No bidder may withdraw his bid within 48 days after the actual date of the opening thereof.

(Sgd) I. H. Schram, Chief Engineer

SUB BIDS WANTED

For clearing and snagging approximately 6.5 miles, or any part thereof of Steele Bayou, near Vicksburg, Mississippi. Interested parties contact Inland Construction Co., Inc., P. O. Box 507, Rosedale, Mississippi, Telephone 13. (278)

SEARCHLIGHT SECTION

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

UNDISPLAYED RATE:

(Not available for equipment advertising)

$1.20 cents a line, minimum 4 lines. To figure advance payment count 5 average words as a line.

INDIVIDUAL EMPLOYMENT WANTED undisplayed advertising rate is one-half of above rate, payable in advance.

PROPOSALS, $1.00 a line an insertion.

INFORMATION.

BOX NUMBERS care publication New York, Chicago or San Francisco offices count as 1 line additional in undisplayed ads.

DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

DISPLAYED—RATE PER INCH:

The advertising rate is $11.50 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page. E.N.R.

NEW ADVERTISEMENTS received by August 8th appear in August 18th issue subject to limitation of space available.

STRUCTURAL DETAILERS

WANTED

STEADY WORK

• Good Salary

VACATION

Send detailed information.

THE MARYLAND STEEL PRODUCTS CO.
BUSH & RIDGELY STREETS, BALTIMORE, MD.

WANTED

PRODUCT ENGINEER

Midwestern road machinery manufacturer wants engineer to:

1. Design new mechanisms, alterations and adaptations for one line of product.
2. Investigate alterations to designs for improved performance.
3. Prepare preliminary layout drawings: direct draftsmen toward final detail.
4. Be responsible for strength calculations, correction of proportions, etc.
5. Adjust dimensions, material, etc., to facilitate shop procedure.

Motor grader or construction machinery experience highly desirable. This is a permanent position with old established firm. Give full details in first letter. All information in strict confidence. Salary commensurate with ability and experience.

P-9534, Engineering News-Record
330 W. 42nd Street, New York 18, N. Y.

STRUCTURAL STEEL ESTIMATOR
and
DETAIL DRAFTSMEN

Experienced. Excellent opportunity with Progressive Steel Fabricator in Southeast. Apply giving age, experience and salary required.

SOUTHERN ENGINEERING COMPANY
CHARLOTTE, N. C.

WANTED: RIGGER BOSS

High Dam—Cableway—Maintenance—Operation

At least two (2) years experience actual cableway handling in responsible charge—handle very heavy loads—equipment — good salary — eighteen (18) months minimum duration—South—send reference, including salary required—complete story and telephone number to:

P-9432, Engineering News-Record
330 W. 42nd Street, New York 18, N. Y.

WANTED

Architects, engineers, landscape architects. Only high type men wanted. Good salaries, permanent places.

JOHN LEON HOFFMAN, Inc.
Planning Consultants
Forsyth, Georgia

WANTED

REINFORCED CONCRETE DESIGNER
ARCHITECTURAL DRAFTSMAN

Prefer men with experience on power plants or heavy industrial structures. Location—Charlotte, N. C. Write giving training, experience and salary desired to

CHIEF DESIGNING ENGINEER
Duke Power Company
Power Building Charlotte, N. C.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (18)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

WANTED—ENGINEERS, Architects, Draftsmen experienced in the design of sewers, sewage treatment plants, water treatment plants and industrial buildings. Also engineers to supervise construction. State qualifications, experience. Salary requirements and date available. P-1155, Engineering News-Record.

WANTED: THOROUGHLY experienced estimator for building contractor specializing in public works. Stanley W. Newman Co., Inc., Mobile, Ala.

DRAFTSMAN: STRUCTURAL steel fabricator in Baltimore area desires services of thoroughly experienced man for detailing and checking. Excellent position for properly qualified man. Please give experience in detail and salary expected. P-9383, Engineering News-Record.

ENGINEER EXPERIENCED industrial and power plant construction about four years in field plus two or three in design and drafting. Opportunity for one who knows construction responsibilities both office and job and likes them. Degree not essential. Northern Ohio City location. P-9471, Engineering News-Record.

WANTED THOROUGHLY experienced estimator for well established general building contractor's office. Location—Central Indiana State education, experience, age, salary desired and when available. P-9425, Engineering News-Record.

WANTED: LICENSED Engineer under 50 years of age, with at least 10 years experience in design of road and bridge plans. Must be familiar with F.R.A. and N.J. State Highway requirements. State qualifications, experience, salary and age. Position is in classified division of State Civil Service. P-9543, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT wanted. At least ten years' experience. Under 50 years of age. In complete charge of project consisting of 2 miles of large sanitary sewer piping for established construction company in New Jersey. Capable of handling all types sanitary sewer projects. Familiar with estimating. Furnish experience record and complete data. Good salary. P-9545, Engineering News-Record.

ESTIMATOR: EXPERIENCED quantity survey man and project manager. Virginia-Carolina area. P-9549, Engineering News-Record.

SUPERINTENDENT: EXPERIENCED in private and public buildings. Virginia-Carolina area. Give full experience, references and salary expected. P-9550, Engineering News-Record.

WANTED EXPERIENCED structural steel draftsman, location Oklahoma. Reply P-9547, Engineering News-Record.

SUPERINTENDENT OF Construction, experienced in heavy concrete foundation & building construction in Chicago area. P-9522, Engineering News-Record.

SALARIED POSITIONS $3.500—$35,000

If you are considering a new connection communicate with the undersigned. We offer the original personal employment service (39 years recognized standing and reputation). The procedure, of highest ethical standards, is individualized to your personal requirements and develops overtures without initiative on your part. Your identity covered and present position protected. Send only name and address for details.

R. W. BIXBY, Inc., 272 Dun Bldg., Buffalo 2, N.Y.

POSITIONS VACANT

ENGINEER, CIVIL, experienced in drafting, surveying, quantity estimating and field supervision. Write P. O. Box 755, Langley Field, Va.

BOOKKEEPER, EXPERIENCED in preparation statements, tax matters, etc., for general contractor. Write P. O. Box 2240, Norfolk, Va.

WANTED: AN experienced Engineer for a City of 22,000 population, salary $4,000.00. Address: Carl E. Pratt, Sr., Mayor, Hastings, Nebraska.

SELLING OPPORTUNITY OFFERED

CONTACT MEN Wanted. No selling. Must have Intimate Friendship (not casual acquaintances) amongst the top men who direct purchases of industrial and contractors supplies and equipment. Write full resume confidentially. Commission open. RW-9548, Engineering News-Record.

POSITIONS WANTED

STRUCTURAL ENGINEER, P.E., N. Y. to take work in contract, design and details of steel, concrete and timber structures. Also Metr. Syst. and Spanish. Efficient service assured. PW-9426, Engineering News-Record.

CIVIL ENGINEER, Master's in structural. Married. Desires connection with firm engaged in industrial building—location immaterial. PW-9420, Engineering News-Record.

(Continued on page 143)

When Writing

Your Ad

Provide an indexing or subject word.

Write it as the first word of your ad.

If it is a Position Wanted or Position Vacant ad, make the first word the kind of position sought or offered.

This will assure proper classification in the column.

The right is reserved to reject, revise or properly classify all Want Advertisements.

Proper Classification increases the possibility of Prompt Returns

SEARCHLIGHT SECTION

GENERAL SUPERINTENDENT

AVAILABLE

25 Years experience responsible charge major construction—Highways, Bridges, Power Plants, Industrial Plants, Waterfront Work, Hydro-Electric Developments, Tunnels, Pipelines, etc. Spanish Speaking—Would prefer foreign assignment but would accept suitable domestic employment.

PW-9190, Engineering News-Record
330 W. 42nd Street, New York 18, N. Y.

AVAILABLE:

Registered Engineer with Thirty years experience on the design, construction and operation of industrial process and chemical plants, desires connection as chief industrial engineer, chief engineer or consultant.

PW-9483, Engineering News-Record
330 W. 42nd Street, New York 18, N. Y.

POSITIONS WANTED

(Continued from page 142)

CONSTRUCTION MANAGER or General Superintendent. 30 years experience in all construction phases, knows how to get work completed under adverse conditions, good organizer, pusher and cost conscious. Willing to travel. PW-9422, Engineering News-Record.

ENGINEER, 12 years top experience in Piping, Heating and Ventilation in Industrial and Office Type Structures. Wishes a connection in Construction Plant Maintenance Engineering, or Design. PW-9467, Engineering News-Record.

ENGINEER REGISTERED ten years experience heavy construction as estimator, superintendent, manager desires connection domestic or overseas. PW-9410, Engineering News-Record.

CONSTRUCTION EXECUTIVE, experience with nation-wide chemical company, desires position in charge of construction and non-process maintenance work. PW-9494, Engineering News-Record.

CONCRETE FOREMAN, 28 years experience in concrete field. Aggregate, batch and crushing plants. 200 to 900 yds. placing and handling. Foreign position desired. PW-9474, Engineering News-Record.

FIELD ENGINEER—Civil Graduate—31 yrs. age. Broad experience on large scale topographic surveys and heavy construction in Mexico, South America, Middle East, and U. S. Desires connection with contractor. West or West Coast preferred. PW-9321, Engineering News-Record.

MASTER MECHANIC, or Plant superintendent. Desires permanent position experienced in diesel, gasoline, steam, air powered construction equipment including locomotives and power plant equipment. Capable taking full charge. Age 35, married. PW-9530, Engineering News-Record.

GRADUATE CIVIL Engineer, age 39, desires position with little or no traveling. 20 years experience in highway design, and construction, field layout, bridges, airports, building foundations, quantity estimating. Good habits, tactful, congenial. Now employed, available on reasonable notice. Preference South West. PW-9541, Engineering News-Record.

CIVIL ENGINEER desires teaching position. One year field experience. Second year would study part time, for M.S. in structural or sanitary engineering and continue teaching. PW-9537, Engineering News-Record.

POSITION WANTED: General Foreman, age 34, married, energetic, reliable and good all-around construction man. Sixteen (16) years experience in engineering, foreman, and superintendent capacities; heavy construction, general all-around building construction, general building maintenance, alterations, road work, utilities, etc., all trades. Capable of performing engineering duties in connection with the above; progress, estimating, drafting and take-off experience; used to directing a large force of men on a variety of projects. Excellent references. Desire permanent position with good advancement possibilities, with reliable company, preferably South or South-eastern states. Available August 15th, 1949. PW-9558, Engineering News-Record.

CIVIL ENGR. Grad., Veteran, 2 yrs. exp. desires connection with constructor as Asst. Foreman or similar field job. Location immaterial. PW-9554, Engineering News-Record.

DIRECTOR OF PLANNING, CHIEF ENGINEER OR PROJECT MANAGER AVAILABLE

Accustomed to organizing and progressing work faster, at lower cost and with greater profits than original estimates. Thoroughly experienced in all phases of planning, programming, budgeting, design and construction of Expressways, Parkways, Highways and other municipal projects. Also, in conducting negotiations and maintaining goodwill with public officials.

PW-9527, Engineering News-Record
330 West 42nd Street, New York 18, N. Y.

POSITIONS WANTED

PILOT WITH requirements—4300 flying hours. Desires permanent position. Will answer all requests. Owen C. Jones, 48415 Ford Road, Plymouth, Michigan.

MECHANICAL ENGINEER, 24, recent grad., desires opportunity in mechanical or related fields, including sales. Army electronics experience. Salary secondary. PW-9562, Engineering News-Record.

SELLING OPPORTUNITY WANTED

ENGINEER (PROFESSIONAL) in charge of construction and maintenance of large industrial organization present, would like make change and represent some reliable engineering concern in the New York City area handling sales, service and installation of some item which offer good opportunity on commission basis. RA-9557, Engineering News-Record.

BUSINESS OPPORTUNITY

For Sale:

Nationally circulated construction bulletin containing buyers and sellers classified advertising. Can be cheaply mimeographed or offset printed. Other interests compel immediate sacrifice. Excellent profit opportunity. Also ideal for Equipment Broker. $950 buys all. BO-9556, Engineering News-Record.

SPECIAL SERVICE

Construction Costs:

Civil engineer, extensive experience, will prepare budget or competitive estimates of any structure, per diem or commission basis. SS-9469, Engineering News-Record.

PATENT ATTORNEY

Patent Practice

before U. S. Patent Office. Validity and infringement investigations and opinions. Booklet and form "Evidence of Conception" forwarded upon request. Lancaster Allwine & Rommell, Registered Patent Attorneys, Suite 454, 815-15th Street, N.W., Washington 5, D. C.

WANTED

Large engineering firm wishes to acquire several complete plants through purchase of (1) capital stock, (2) assets, (3) machinery and equipment, whole or in part. Personnel retained where possible, strictest confidence.

Box 1206
1474 Broadway New York 18, N. Y.

FOR SALE

Three portable coal preparation plants built by Iowa Mfg. Company, Cedar Rapids, Iowa. One new and two used less than a year. These plants are mounted on rubber tires and can be easily moved and quickly set up. Capacity 200 tons per hour, complete with crushers, screens, picking tables and loading belts, for preparing stoker fuel, oil treated, straight mine run or crushed to sizes. These plants are located near Middlesborough, Kentucky, and for further information write to

B. PERINI & SONS INC.
Box 138 Middlesborough, Kentucky
Telephones 464 and 465

LEARN TO ESTIMATE

Today, more than ever before, you must know how to analyze building costs. If you want to become a successful builder, learn how to prepare a correct estimate in a hurry. Get in on the profitable work now available wherever you turn. Your success is assured if your estimates are right; otherwise you are licked before you start.

The Tamblyn System of Estimating will make a real estimator out of you in a few weeks of your spare time. We are so sure that you will want to learn it, that we will send you our complete home study course for ten days examination absolutely free. If you don't think it is the finest thing you ever saw, just return it and it won't cost you a cent. If you like it and want it, send us $8.75 when 10 days are up and $7.50 per month until $38.75 is paid.

This estimating system is based on forty years of actual construction experience. It has been sold all over the world for more than twenty years. Thousands of estimators and contractors swear by it. Our offer isn't hot air and big talk. We don't give you a diploma or a lapel button, but we do teach you down to earth estimating which will bring you profitable business.

Just send your name and address today, and we will mail you the complete course at once for your approval.

TAMBLYN SYSTEM

1115 So. Pearl St., E-321
Denver, Colo.

Napoleon once said
"An Army Marches on Its Stomach"

We Have Fed Millions

KANE INDUSTRIAL SERVICE

Industrial Feeding.
Labor Camps.
Labor Camp Equipment.
Free Employment Agencies.
30 Years' Experience in the Housing and Feeding of Men for Satisfied Clients.
Abundant Labor Supply available for Large Projects Anywhere.

VALENTINE B. KANE & ASSOCIATES
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FEEDING and HOUSING
employees of Contractors . . .
Railroads . . . Industries . . .
OLYMPIC COMMISSARY CO.
CHICAGO 6, ILL.: 302 S. Canal St.
Phone HA 7-1670
SEATTLE: 316 Second Ave., South
MINNEAPOLIS: 105 Nicollett Ph: Atl 4845.

BUY *DEPENDABLE* USED EQUIPMENT

FROM A DISTRIBUTOR WITH REBUILDING "KNOW-HOW"

TRACTORS

International 1945 TD18 Bucyrus Erie Hydraulic Bulldozer	$7500
International 1947 TD18 Bucyrus Erie Hydraulic Bulldozer	$9000
Caterpillar 1941 D4 LaPlante Choate Hydraulic Bulldozer	$4750
Caterpillar 1947 D4 LeTourneau Cable Bulldozer	$4500
Caterpillar 1947 D6 LaPlante Choate Hydraulic Angledozer (1600 hrs.)	$8500
Caterpillar 1946 D2 Traxcavator	$3500

CRANES — SHOVELS

Unit ½ yd. 1947 Model 514 Crawler Crane 25' Boom	$6500
Northwest 1931 Model 4 Crawler Crane 50' Boom	$4500

BUY OF THE MONTH

International Dec. 1948 TD9 Wide Gauge Tractor Isaacson Hydraulic Bulldozer 200 hours. New Machine Guarantee....$6500.

PILE HAMMERS

McKiernan Terry #6	$675
McKiernan Terry #7	$950

PUMPS

Jaeger 10" 200M Hercules Gas Engine	$850

TRUCK MIXERS

10—Jaeger 4 yd. with Hercules gas engine and starter, rear operating controls, two speed transmission, new blades and buckets, thoroughly overhauled—$2200 each.

COMPRESSORS

Ingersoll-Rand 1938 105' Portable 2 Pneumatics	$750
Ingersoll-Rand 1940 210' Portable 4 Solid Rubber	$800
Ingersoll-Rand 1941 315' Portable 4 Solid Rubber	$1000
Ingersoll-Rand 1941 500' Portable 4 Pneumatics	$2500
Ingersoll-Rand 220' Portable 4 Steel Wheels	$225
Ingersoll-Rand 310' Portable 4 Steel Wheels	$250
Worthington 60' Portable 2 Pneumatics	$450

MISCELLANEOUS

Hough HA Payloader 1946	$2200
International I4 Wheel Tractor 1948 Trojan Hydraulic Bulldozer	$1900
Adnun Asphalt Spreader 1937	$1500

EXPORT SERVICE **SUBJECT TO PRIOR SALE** **IMMEDIATE DELIVERY**

Distributors of: Thew-Lorain Cranes & Shovels - International Harvester Tractors—Chain Belt "Rex." Equipment — Barber-Greene Bituminous & Material Handling equipment—Adams Graders—Hough Pay-loaders and others.

EHRBAR

SINCE 1903

UNION, N. J.
Unionville 2-7400

BROOKLYN, N. Y.
Evergreen 3-5000

WESTBURY, L. I.
Westbury 7-1990

DIESEL GENERATOR PLANTS

COMPLETE WITH SWITCHBOARDS

1000 KW TO 100 KW
STATIONARY AND PORTABLE

AT GREATLY REDUCED PRICES
NEW UNIT GUARANTEE

HERCULES ELECTRIC MACHINERY and EQUIPMENT CO.

Telephone NEvada 6-2808
Cable Address HEMCOY

1412 So. Alameda Street
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PUMPCRETES

1—REX PUMPCRETE, Model 160 Double, Completely Overhauled, Gasoline Engine Driven, Latest Model Machine with Selective Drive Transmission, with approximately 1,000 lin. ft. 7" Pipe.

1—REX PUMPCRETE, Model 160 Single, Gasoline Engine Driven, Very Latest Model, Completely Overhauled with approximately 700 lin. ft. 6" Pipe.

FURNIVAL MACHINERY CO.
54th & Lancaster Ave.,
Phila. 31, Pa.

NEW and REBUILT
STORAGE BATTERY

LOCOMOTIVES

1½ to 10 Ton — 18" to 56" Track Gauge
GREENSBURG MACHINE CO.
Greensburg, Penna.

Caterpillar Diesel Engines

Model D-13,000 and D-8800

Complete - Very few hours

JULIUS HEBENSTREIT, INC.
56-15 58th St., Maspeth, L. I., N. Y.
Tel. Davenport 6-1461
Cable Address: Habenjul New York

BACKHOE

1—Lorain-41 Backhoe, 19' goose-neck boom, 40 inch Bucket, Precision Boom Hoist & tagline, also shovel equip. on turntable, new late 1947, like new.

GREY STEEL PRODUCTS CO.
74 Central Ave., Glen Rock, N. J.
Tel. Ridgewood 6-2275

WHOLESALE PRICES—

PNEUMATIC TOOLS

NEW OR REBUILT

ELKIN
3263-81 ST.
JACKSON HTS., N. Y.
HA-9
7810

Scoopmobiles & Buggymobiles

NEW & USED

For Sale or Rent

HODGE & HAMMOND, INC.
1100 E. 156th Street, New York 59, N. Y.

FOR SALE *CHEAP*

1—25 ton Industrial gasoline Locomotive Crane standard gauge, double drum, 50' boom.

1—Schramm Diesel 315 cu. ft. 2 stage compressor, pneumatic tires, new 1947.

1—LeRoi Diesel 315 cu. ft. 2 stage compressor, pneumatic tires, new 1946.

HARRY C. LEWIS
899 East Grand Street Elizabeth, N. J.

L.B.SMITH INC.

OFFERS

AIR COMPRESSORS

Worthington two-stage, water cooled, vertical 250#, 60 CFM, new condition.

Gardner-Denver, 105 foot, with air receiver, hose reel, driven by power take-off and mounted 1941 Ford.

Gardner-Denver air-cooled 105 foot with receiver, V-Belt driven from power take-off and mounted on 1942 Ford chassis with Wood two-yard dump body.

Gardner - Denver 2 - stage 160 ft., skid Mtd.

Worthington 210 cubic foot, two-stage air-cooled, on steel wheels, Hercules diesel.

Chicago Pneumatic 210 cubic foot, two-stage, air-cooled, Caterpillar diesel on four rubber tired wheels.

Gardner-Denver 315 cu. ft. two-stage, skid mounted, Murphy four-cylinder diesel.

Pennsylvania 12" x 10" class 3A single cylinder, 355 cubic foot P.D., flat belt driven, 50 HP slip ring motor.

QUARRY EQUIPMENT & BINS

New 16 x 16 double clamshell gates.

20" x 6'6" Belt Type Magnetic Separator.

Link-Belt style 146 vertical centrifugal discharge bucket elevator, belt type, fully enclosed, extendable to 65'.

3018 Cedarapids roller bearing roll crusher, new condition, new warranty, used as demonstrator only.

18 x 36 Farrell deep jaw crusher, with McLanahan 3' x 7' roll type feeder.

10 x 36 Cedarapids, practically new.

10 x 20 Champion #4½ prim. jaw crusher.

10 x 7 Allis Chal. Blake type jaw crusher.

Williams 20-S pulverizer.

Cedarapids No. 1 Kubit.

100 ton 3 compartment storage or aggregate bin with or without batcher and scales.

0 ton 2 compartment storage bin with clam shell gates.

ELECTRIC MOTORS

New & Rebuilt—All Sizes
3 to 125 HP in stock
Open and Totally Enclosed

TRUCKS—TRAILERS

1½-ton Ford & Chevrolet.

2½-ton GMC, New and rebuilt.

Sterling COE Model 255GCS tandem drive ractor, 9.00x24 tires, 200 HP Cummins supercharged diesel, excellent condition.

0-ton Rogers low bed equipment trailer, 16—7.50x20 tires, airbrakes, outriggers, excellent condition.

Van Trailers with 17' x 7'8" x 6' bodies. Five ton capacity.

,000 gallon tanks on semi-trailer mounting.

New and rebuilt dump bodies.

GASOLINE AND DIESEL ENGINES

New JXD Hercules Gasoline.

Buda, Hercules, Hill diesels, rebuilt.

New Murphy 4 and 6 cylinder diesels.

GM 6 and 12 cylinder diesels, practically new.

SHOVEL ATTACHMENT

Lorain 30A chain crowd, LBS#5142, 16' boom 13'4" stick ½-yd dipper.

Lorain 40 Hi-Lift, 25' boom 19'8" stick LBS #5877, new ¾-yd dipper LBS#7750.

P&H 203A, LBS#2527, 19'6" boom 13' stick ⅝-yd dipper.

Bucyrus-Erie 30B tunnel front 9' stick 1½-yd dipper LBS#3392.

Koehring 502 with necessary parts to convert from crane to shovel, 21' boom 16' stick 1¼-yd dipper.

BACKHOE ATTACHMENT

Lorain 41 backhoe, LBS#5429, with 18' boom, 7' stick, 36" cutting width Amsco bucket. Will fit any ¾-yd Lorain with serial number over 9,000.

DRAGLINE FAIRLEADS

New Osgood ½-yd Model 200.

BACKHOE BUCKETS

¾-yd Lorain, 40, LBS#6105, 44" cutting width, teeth, sheave.

27" outside width drop bottom type LBS #1033, good condition.

26" outside width solid bottom type LBS #4377, good condition.

NEW TAGLINES

McCaffrey Model 648 for 1¼ to 2-yd crane.

McCaffrey Model 636 for ¾-yd to 1-yd crane.

SHOVEL DIPPERS

Bucyrus-Erie 20B, ¾-yd LBS#3801.

Lorain 41, ¾-yd, LBS #7433, new condition.

New Lima 1-yd, Amsco, LBS#2295.

Bucyrus-Erie 1¼-yd gas air, LBS#3782, fair.

Lorain 75 manganese 1¼-yd, LBS#7233, teeth and bail.

Lorain 75B, 1¼-yd extended lip, 1¾-yd LBS#2260.

Pettibone-Mulliken 2-yd Lorain 82 or 820, manganese, LBS#5361.

Pettibone-Mulliken 2-yd for 3500 Manitowac LBS#5763.

CONCRETE ROAD BUILDING & MISCELLANEOUS CONCRETE HANDLING EQUIPMENT

Pavers & Mixers

Ransome 34E dual drum, new October, 1943, with 36'9" boom, 1000 gallon auxiliary water tank, Cummins engine, rebuilt.

Jaeger Model 14DL, non-tilt mixer, rebuilt.

Concrete Finishers

Jaeger type "L" double screed, 10½'-12½', rebuilt.

Heltzel 10'-12' finisher, rebuilt.

Blaw-Knox gas-electric 10½'-12½', rebuilt.

2 Koehring 10'-12', rebuilt.

Koehring 10'-16' finisher, rebuilt.

Concrete Spreaders

Blaw-Knox type SA 10'-15' spreader, new 1943. New condition.

Concrete Road Forms

830'—Truscon 7"x8" forms, with stakes.
1380'—Heltzel 7"x8" forms, with stakes.
1300'—Blaw-Knox 8"x8" forms, with stakes.
4450—Heltzel 9"x8" forms, with stakes.
1430'—Heltzel 10"x8" forms, with stakes.
1010'—Blaw-Knox 10"x8" forms, with stakes.

Fine Grade Machines

Flynn surgrader 10'-12', rebuilt.

R.B. Fine Grader for 21' width, rebuilt.

Form Graders—2 of each

Cleveland formgrader, new condition.

Carr formgrader, new 1944, rebuilt.

BELT CONVEYORS

New 18"—24"—30"—36"

- "Sealed-for-life" idlers
- Lattice or channel frame
- Shipment from stock depending on length

CLAM—DRAG—SCRAPER BUCKETS

GRADERS

Caterpillar 44 hydraulically operated drawn grader, 12' blade, wt. 8,300 lbs.

York Corporation Model SR drawn grader with scarifier, 8' blade, rakes, pneumatics, wt. 7,900 lbs.

DIESEL POWERED TRACTORS

"FD" Cletrac with Buckeye blade and double drum P.C.U.

DIESEL GENERATORS

7½ KW to 125 KW. Alternating and direct current.

Phone **HARRISBURG, PA. 7-3431**

LASTING • BONAFIDE • SERVICE
L.B. SMITH, Inc.

L.B.SMITH INC. CAMP HILL, PA. SUBURB OF HARRISBURG

WE OWN THE EQUIPMENT WE ADVERTISE

for IMMEDIATE DELIVERY *of* RUBBER PRODUCTS

CALL WIRE WRITE **CARLYLE**

THE RUBBER HEADQUARTERS

CONVEYOR BELTING, TRANSMISSION BELTING, ELEVATOR BELTING, FIRE, WATER, AIR, STEAM, SUCTION and WELDING HOSE.

CARLYLE RUBBER PRODUCTS ARE NEW, GUARANTEED & LOW PRICED

NEW

GUARANTEED

CONVEYOR BELTING

ABRASIVE RESISTANT COVERS

Width	Ply	Top-Bottom	Covers	Width	Ply	Top-Bottom	Covers
48"	8	1/8"	1/16"	24"	4	1/8"	1/32"
42"	5	1/8"	1/16"	20"	5	1/8"	1/32"
36"	6	1/8"	1/16"	20"	4	1/8"	1/32"
30"	6	1/8"	1/16"	18"	4	1/8"	1/32"
30"	5	1/8"	1/16"	16"	4	1/8"	1/32"
26"	5	1/8"	1/32"	14"	4	1/16"	1/32"
24"	5	1/8"	1/32"	12"	4	1/16"	1/32"

Inquire For Prices — Mention Size and Lengths

TRANSMISSION BELTING

HEAVY-DUTY FRICTION SURFACE

Width	Ply	Width	Ply	Width	Ply
18"	6	10"	6	6"	5
16"	6	10"	5	5"	5
14"	6	8"	6	4"	5
12"	6	8"	5	4"	4
12"	5	6"	6	3"	4

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ENDLESS "V" BELTS

"A" Width All Sizes —
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FIRE HOSE

APPROVED SPECIFICATION HOSE EACH LENGTH WITH COUPLINGS ATTACHED

I.D. Size	Length	Per Length
2½"	50 feet	$28.00
	25 "	16.00
2"	50 "	23.00
	25 "	13.00
1½"	50 "	20.00
	25 "	11.00

Specify Thread On Couplings

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I.D. Size	Length	per Length	Universal Couplings
½"	25 feet	$5.00	$1.50 Pair
	50 "	10.00	1.50 Pair
¾"	25 "	7.50	1.50 Pair
	50 "	15.00	1.50 Pair
1"	25 "	10.00	1.50 Pair
	50 "	20.00	1.50 Pair

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WATER HOSE

I.D. Size	Length	per Length	I.D. Size	Length	per Length
¾"	25 feet	$4.25		35 feet	$10.50
	50 "	8.00		40 "	12.00
1"	25 "	6.25		50 "	15.00
	50 "	12.50	1½"	25 "	10.00
1¼"	25 "	7.50		35 "	14.00
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Each Length with Couplings Attached

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1—Northwest 25 Truck Crane
5—25, 30 & 40 Ton Loco Cranes
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8—15 Ton & 25 Ton Cap. 100 Ft. Boom Whirleys with or without Gantrys, Steam Elec. Diesel 1½ Yd., 42B Bucyrus Steam, 50 ft. Boom Crane & Shovel
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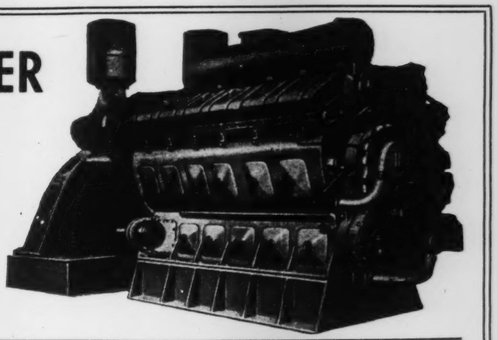

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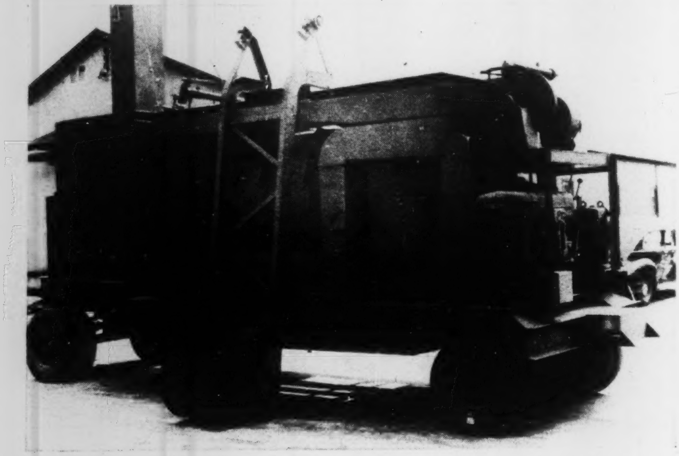


Disposal Equipment Eliminates Long-Distance Pumping

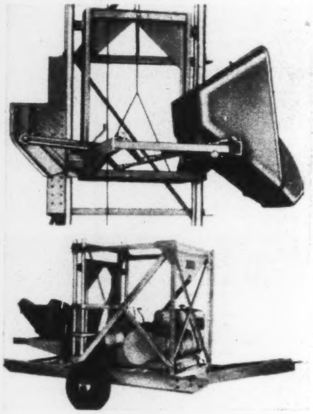
The Nepeco process consists of removing solids from sewage and burning it without odor. Its special feature is that the equipment can be located at a river's edge, wherever a sewer main empties, or at a pumping station. The Nepeco equipment can be used to dispose of hospital or industrial sewage and eliminates the need for pumping these wastes over long distances. All sewage is pumped into the Nepeco process cone filter where solid particles are removed and passed into sludge-retaining tanks to be destroyed later in the Nepeco incinerator. The filters can be located inside buildings, set into over-size manholes, or other convenient location. Their operation is said to be odorless and noiseless. The mobile incinerators are designed to burn sludge, garbage, and rubbish with up to 90 percent moisture. Two oil burners are used: the first to dehydrate contents of the rotary drum and to start combustion; the second, to complete combustion. They are self-contained and powered, and can function while in transit. Stationary Nepeco incinerators can be supplied for any capacity with electric or diesel power units. They are fed by a skip hoist which receives material at street level. —Nepeco, Inc., 899 Boylston St., Boston 16, Mass.

Portable Tilting-Arbor Saw

Gasoline-engine-driven tilting-arbor saw handles all jobs calling for straight ripping, cut off, angular cutting, grooving, dadoing, shaping, and rabbeting. The gray-iron main table is 20 inches wide x 27 inches long. It comes equipped with three aluminum extensions to provide a 42 x 32-inch working space. The tilting and elevating unit is controlled by a positive nut-and-screw arrangement. A 5-foot flexible shaft with ½-inch core conveys power from the 3-hp. engine. The Toolkraft Model 97 can be powered by an electric motor, if desired.—Toolkraft Corp., 449 Meadow St., Waterbury 91, Conn.

Flue-Lining System

A system for lining all types of hot flues, ducts, breechings and similar materials is designed for field applications. It consists of block insulation supported by a system of bars which are held in position by bolts welded to the steel shell. The insulation is covered with an Insuliner cement which protects it and resists a reasonable amount of abrasion. The Detrick insulation is in block form and is flexible enough to be used on any contour, requiring only the need of cutting the block to fit the space. Castings are designed to hold the insulation and hard-surface material in place. They are applied to the block and then bolted through. The castings are available in 21-in. lengths with a hole in the center and lugs 4½ in. from each end. Break-off notches are provided 3 in. from each end to permit closer centers where necessary. The Insuliner cement is applied with a trowel.—M. H. Detrick Co., 111 W. Washington St., Chicago 2, Ill.



Hoist Tower Attachments

Two new attachments for the Jaeger self-raising hoist tower are a ½-cubic-yard concrete bucket and a trailer transporter. The bucket is of the rollover type and will hold the full load of an 11-S mixer. Designed for ground-level loading from concrete mixers or transit mixers, discharge is automatic at regulated levels. The standard tower height is 37 feet, with extensions available to increase this to 67 feet. A safety device prevents the bucket from falling. The trailer-transporter is designed to carry the two largest sections of the tower —the base section, and the engine-driven hoist. The remainder of the tower is easily carried by truck or other hauling means. The transporter's heavy-duty automotive-type wheels have Timken bearings and 6-ply 5.00 x 16 tires.—The Jaeger Machine Co., 550 Spring St., Columbus 16, Ohio.

Improved Magnetos

An improved line of magnetos, designed to give longer life and increased power to construction equipment, is available in 1, 2, 4 and 6-cylinder styles suitable for all types of gasoline engines. The predominating features

(Continued on page 160)

Free Rings—every time

A QUICK look at the "repair" figures in your operating expense account will show that cylinder reboring is one of the costliest of maintenance jobs. Out-of-round or scored cylinders are caused by "stuck" piston rings. These waste oil—even before you're faced with the expense of re-boring.

Quaker State HD Oil is noted for its special quality characteristics which keep rings *free*—assure maximum compression, peak operating efficiency and finer lubrication. Skillfully refined from 100% pure Pennsylvania grade crude oil, it keeps engines clean as it lubricates.

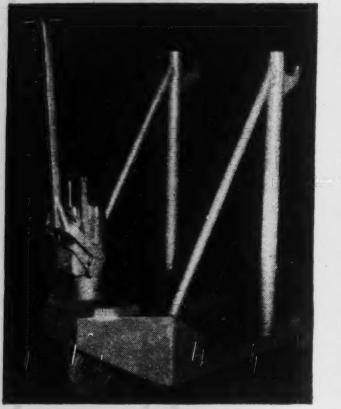
In the correct weights for every heavy duty use in trucks, buses, tractors and taxis, Quaker State HD Oil helps you get the highest return on your equipment investment.

QUAKER STATE
HD OIL
AND SUPERFINE LUBRICANTS

Use Quaker State HD Oil for trucks, buses, taxis, tractors.
Use Quaker State Motor Oil for passenger cars.

QUAKER STATE OIL REFINING CORPORATION • OIL CITY, PENNSYLVANIA

are longer-life breaker mechanism, larger bearings, improved magnetic rotor and improved timing facilities on the four-cylinder units. The FM-X line is especially recommended for use with the Type UE universal impulse coupling which is adjustable for lag angles of 10, 20, 30, 40 or 50 deg. The coupling also provides for adjustments to various lug angles to meet changing operating conditions. They can be run with either clockwise or counter-clockwise rotation.—FAIRBANKS, MORSE & CO., BELOIT, WIS.

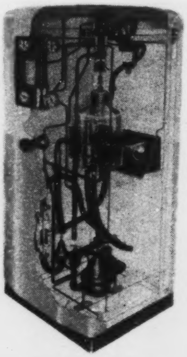


Truck for Cable Reels

Large reels are easily handled with a special hydraulic lift truck. The reel carrier is built like a single face pallet truck. Two base forks are provided with a center opening wide enough to straddle the reel to be lifted. Two uprights, welded to the base forks, have hooks which slip under the ends of a shaft passing through the reel hub. Elevating the truck five inches by the self contained hydraulic pumping unit lifts the reel so that it can be easily transported. The truck shown has a capacity of 1,000 lb. It is furnished with either rubbed-tired or metal wheels. Fork openings and the height of pickup hooks can be furnished to meet a wide range of reel sizes because each truck is built as a special unit.—LYON-RAYMOND CORP., 1825 MADISON STREET, GREENE, N. Y.

Portable Electric Hand Lamp

Lamp with 6-in.-diameter head of chromium-plated 20-gage steel with triple-silvered reflector throws powerful 2,000-ft. beam. A built-in charger plugs into any 110-volt, a.c. circuit to make recharging the battery easy. Spillproof rechargeable battery with acidproof plastic case does not leak whether lamp is held upside down, sideways or in any other position. Head has swivel attachment vertically with 170-deg. range. Charge indicator eliminates guesswork on condition of battery and does away with hydrometer tests.—U-C LITE MANUFACTURING CO., 1050 WEST HUBBARD ST., CHICAGO 22, ILL.



Chlorinizers in Two Styles

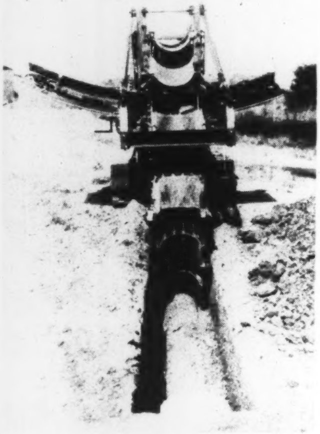
Chlorinizers in three sizes are available in both volumetric and gravimetric models. The Model CVS is readily adapted to semi-automatic, program, or automatic proportional operation by the addition of attachments to the basic unit. The Model DVS may be adapted to semi-automatic or start-stop operation by installation of a solenoid valve, strainer, and bypass in the operating water line. The Model CGS meters and feeds gaseous chlorine by the loss-in-weight principle. Features of these chlorinizers include Sightflo chlorine-rate indicators, low-maintenance control valves, elimination of tray-produced chlorine odors, and automatic cut-off of chlorine gases should a break occur. The only connection required for installing the chlorinizers is one to the water supply for manually operated machines.—BUILDERS-PROVIDENCE, INC., 9 CODDING ST., PROVIDENCE 1, R. I.

Line-Measuring Meter

The Shalda measure meter can be used to compute straight or curved distances in feet and tenths, and is accurate to plus or minus 0.1 percent in 100 feet. Mounted on rubber tires, it has a telescoping handle to permit fast, easy operations. Scale on the Model D runs up to 10,000 feet. The unit weighs 3 pounds.—Exclusive agent—F. D. MCGIRR & ASSOCIATES, 145 S. ELM DRIVE, BEVERLY HILLS, CALIF.

New 16-Hp. Engine

A four-cylinder gasoline engine rated at 16 hp. has been added to its line by the International Harvester Co. The U-1 can be supplied as a stripped engine or with job-engineered attachments for use as a complete power unit. It can be equipped to operate either on gasoline or natural gas. Stripped, the U-1 delivers a maximum of 16.3 brake horsepower at 2500 rpm. Equipped with fan, radiator and air cleaner, it develops a maximum of 16 working horsepower. The engine is $26\frac{13}{32}$ in. in length, $16\frac{11}{32}$ in. in width, 25 in. in height and it has an approximate weight of 280 pounds as an engine or 450 pounds as a complete power unit.—INTERNATIONAL HARVESTER CO., 180 N. MICHIGAN AVE., CHICAGO 1, ILL.

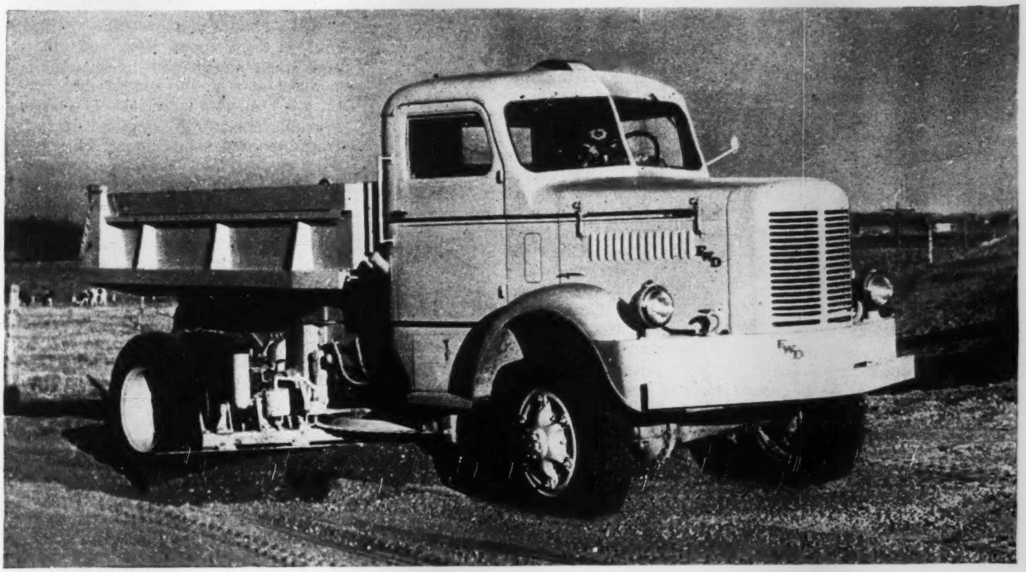


Bucket for Stripping Pipe

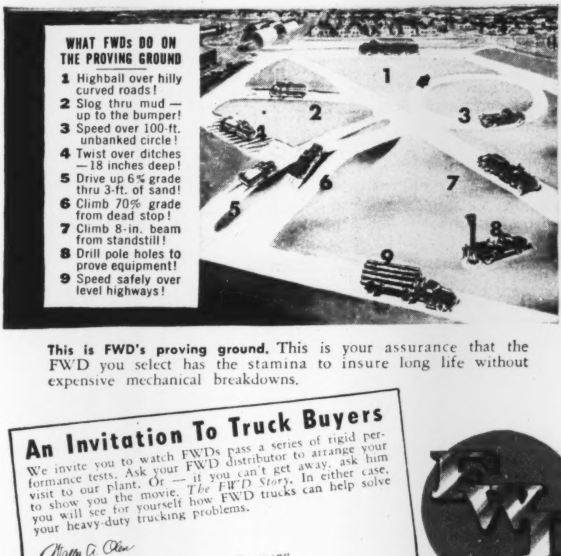
Special design of these buckets permits excavating down to and along both sides of buried pipe to at least the pipe's horizontal diameter. This completely frees the pipe for take-up with no bending damage due to earth bind. The buckets are designed for installation on the digging wheel of Cleveland trenching machines. Buckets are offered in two sizes—16 and 22 in.—for stripping pipe from 4 to 16 in. in diameter. The contour of the stripping buckets facilitate their following and staying on the line despite sidebends. Danger of tooth or rooter damage is virtually eliminated.—THE CLEVELAND TRENCHER CO., 20100 ST. CLAIR AVE., CLEVELAND 15, OHIO.

PROOF - *not Guesswork*

Makes FWD America's Foremost Heavy-Duty Truck



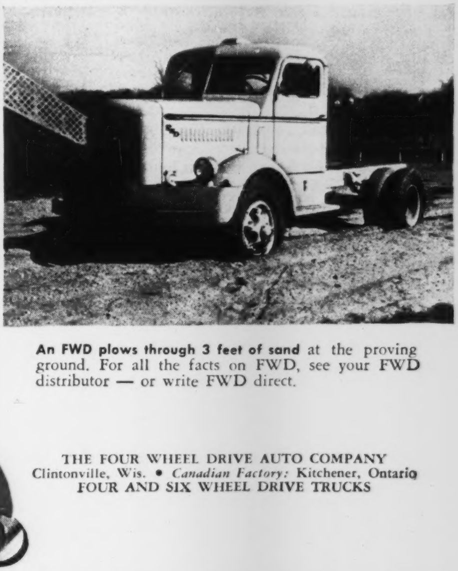
Here's actual operating proof in road maintenance service. This FWD Maintainer is doing a regular job — road-grading. With front wheels pulling and back wheels pushing, you grade smoothly, steadily, even in loose sand or gravel. What's more, FWDs can travel 50 miles or more to and from a job — and still do a day's work. *No wonder FWD trucks are the number one choice of states, counties and municipalities — with individual fleets of over 300 units!*



WHAT FWDs DO ON THE PROVING GROUND

1. Highball over hilly curved roads!
2. Slog thru mud — up to the bumper!
3. Speed over 100-ft. unbanked circle!
4. Twist over ditches — 18 inches deep!
5. Drive up 6% grade thru 3-ft. of sand!
6. Climb 70% grade from dead stop!
7. Climb 8-in. beam from standstill!
8. Drill pole holes to prove equipment!
9. Speed safely over level highways!

This is FWD's proving ground. This is your assurance that the FWD you select has the stamina to insure long life without expensive mechanical breakdowns.



An FWD plows through 3 feet of sand at the proving ground. For all the facts on FWD, see your FWD distributor — or write FWD direct.

An Invitation To Truck Buyers

We invite you to watch FWDs pass a series of rigid performance tests. Ask your FWD distributor to arrange your visit to our plant. Or — if you can't get away, ask him to show you the movie, *The FWD Story*. In either case, you will see for yourself how FWD trucks can help solve your heavy-duty trucking problems.

Walter A. Olen
President
The Four Wheel Drive Auto Company

THE FOUR WHEEL DRIVE AUTO COMPANY
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FOUR AND SIX WHEEL DRIVE TRUCKS

America's Foremost Heavy-Duty Truck

Manufacturers' Publications

Pile-Driving Equipment – A 120-page catalog on pile hammers, pile extractors, and complete pile-driving rigs has been prepared to describe a complete line of double and single-acting hammers, double-acting pile extractors, and many different types of rigs for use on land and water. More than 140 illustrations show these hammers and extractors in use handling concrete, steel, and wooden piles in the construction of bridges, dams, building foundations, highways, railroads, piers, and many other projects. It serves as a complete manual for the selection and use of pile driving equipment for every purpose—McKiernan-Terry Corp., Dept. L, 13 Park Row, New York 7, N. Y.

Cement Spraying–A series of circulars describes Aerocem, an entirely new cement spraying process which is said to afford new scope in decoration, construction and insulation, while effecting economies in time, labor and material. Aerocem mechanizes all the work of the plasterer. It is a new mechanical method for external and internal rendering, plastering, rough casting and decorating. — Aerocem Ltd., Rolands Wharf, 71, Lots Road, Chelsea, S.W. 10, England.

Dual Fuel Diesels–An 8-page illustrated bulletin gives the features of dual fuel diesel engines for gas or fuel oil operation. Three naturally-aspirated models with power ratings of 175 hp. to 960 hp. and two turbo-supercharged models with ratings of 505 hp. to 1,440 hp. are covered. The bulletin describes diesel operation with the two fuels and illustrates the simplicity of controls with fuel conversion by either push buttons or hand lever.—Superior Engine Division, The National Supply Co., Springfield, Ohio.

Preformed Wire Rope–A new folder prints questions and answers on Preformed wire rope, stating questions often asked about this product and giving the answers.—Macwhyte Co., Kenosha, Wis.

Soil-Testing Apparatus — Specification sheets describe a complete line of soil-testing equipment including unconfined compression devices, McRae motorized soil lathe, triaxial shear apparatus, sample ejector, consolidation specimen trimmer, power hack saws, soil-mixing machines, compaction mold, standard rammer, Consolidometer, rotary trimming tool, permeameters, Tyler sieves, and others. Descriptions of operation, construction, and advantages are provided for each device.—Soil Testing Services, Inc., 730 Madison St., Evanston, Ill.

Stopping Masonry Leaks—A little folder gives full information on how to stop leaks in above and below ground masonry—from actual breaks to hair-crack water seepage, even against direct hydrostatic pressure. The product is especially recommended for basements, foundations, tunnels, elevator shafts, pits, dams, reservoirs and swimming pools.—Stonhard Co., 1306 Spring Garden St., Philadelphia 23, Pa.

Rock Cork Insulation – A 4-page folder describes a mineral insulation especially valuable for refrigeration service. Rock Cork comes in the form of sheets, lagging and pipe insulation. —Johns-Manville, 22 E. 40th St., New York 16, N. Y.

Pump Control—A 37-page booklet describes a wide range of controls for domestic, commercial and industrial water systems, including deep wells and small and large compressors, standard duty sumps and tanks, and cellar drain and other light-duty sumps.—Cutler-Hammer, Inc., 238 N. 12th St., Milwaukee 1, Wis.

Fenestra Stock Products–Here is a 28-page catalog which pictures and describes steel windows and doors complete with hardware. Installation details, typical applications and stock types and sizes are shown for residence steel casements, including storm windows and screens, basement and utility windows, projected windows for schools, hospitals and office buildings, and projected windows for stores, commercial and industrial buildings.—Detroit Steel Products Co., 3159 Griffin St., Detroit 11, Mich.

Overhead Wood Doors—A catalog describes sectional overhead-type wood doors, manually or electrically operated, for public or residential garages, service stations, factory buildings, warehouses and other uses—also special counterbalance constructions, vertical-lift doors, and other units to special specifications. McKee Door Co., Aurora, Ill.

Packaged Industrial Heat–Booklet points out how "Thermobloc" heating is accomplished by one or more completely independent, self-contained units that operate instantly on oil or gas, making it possible to fit heat output to the requirements of the day or even the hour, and to effect considerable savings in a heating season.—Thermobloc Division, Prat-Daniel Corp., East Port Chester, Conn.

Snow-Plow Catalog — Now is the time to think about plows and other equipment needed for proper snow removal—not in the winter when the "heat's" on. A timely catalog is now available covering a complete line of truck-mounted snow plows. This 24-page catalog, No. 1002, is profusely illustrated with large views showing the design and construction of the entire line of Baker plows. Complete dimensions and specifications are listed to enable the user to determine the exact plow to meet his requirement. — The Baker Mfg. Co., Springfield, Ill.

Water Treating Plant—Attractive booklet contains a report on the performance of Accelator in treating all kinds of waters for many purposes in various parts of the world. Treating reagents are applied in a new way and the reactions take place under new conditions. Treated and clarified water is produced to new high standards. The manufacturers claim that Accelator is more than a mechanical device: it is a process which has proved very successful.—Infilco, Inc., 325 W. 25th Place, Chicago 16, Ill.

Steel Street Forms–A 28-page booklet solves the problem of selecting and using the proper paving form for making any type of concrete curb, curb and gutter, integral or special curb, or sidewalk.—Blaw-Knox Div., Blaw-Knox Co., 2001 Farmers Bank Bldg., Pittsburgh, Pa.

Magnetic Separators and Detectors — A 12-page 2-colored catalog describes a complete line of permanent non-electric magnetic separators and electronic metal detectors. Complete specifications regarding weights, sizes and strength comparisons for various chute and spout magnets are given as well as tables of operating capacities. Photographs and engineering drawings are used throughout Catalog No. 14 to fully illustrate all features of equipment.—Eriez Mfg. Co., 891 E. 12th St., Erie, Pa.

"Sheetpiling Arbed-Belval" is a booklet describing standard interlocking steel sheetpiling sections obtainable from Arbed-Belval, Luxembourg, through their American agents. — Amerlux Steel Products Corp., 551 5th Ave., New York 17, N. Y.

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18C, 30C, 50C and 80C

● When the job is finished, the last pile battered down, your Super-Vulcan is ready to go again. Toughness, strength, dependability, endurance are built right into this powerful pile hammer. They combine with simple design and easy operation to cut maintenance costs to the bone and to boost the tested positive action of this machine to maximum efficiency.

The Super-Vulcan drives wood, concrete or pipe piles, steel sheeting or H beams. It fits the same leads and uses the same accessories as Warrington-Vulcan single-Acting Pile Hammers.

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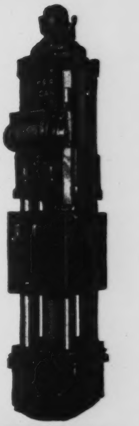


VULCAN IRON WORKS
331 North Bell Avenue
Chicago 12 --- Illinois

READER COMMENT

Asphalt Strip in Dummy Joint

Sir: Your recent article and pictures on the installation of dummy joints on the State of California highways (ENR Apr. 21, p. 22) are splendid. However, the material used on these construction joints is not a roofing paper. It consists of a solid piece of asphalt with kraft liner stock on either side. Laminated roofing paper would not be satisfactory to the requirements of the California Division of Highways. This material is properly referred to as an asphalt premoulded strip.

JOSEPH D. MULLER
W. J. Burke & Co.
San Francisco, Calif.

Aid to Local Roads

Sir: In your editorial "To Study Local Roads" (June 9th issue) you state "It hardly appears probable that the PRA will change its views as to the undesirability of federal aid to local roads as a result of this study." You further state that Congress might approve the rural-road bill and "If that should be done a serious blow would be dealt our present sound road program."

First, I wish to call your attention to the constitutional authority for federal aid to the construction of public roads which was cited by Senator McClellan (Arkansas) at the hearings on the rural roads bill. Senator McClellan stated that the authority for federal aid to road building was from Section 8 of Article I of the Constitution of the United States, "The Congress shall have power to establish Post Offices and Post Roads." The present Public Roads Administration was originally called the Bureau of Post Roads and Trails. The function of that bureau was to establish and build Post Roads and Trails. But, today how many of our fine highways are Post Roads? Very, very few. The mails are carried by rail or plane from city to city, not over the fine concrete highways constructed with federal aid. But the Post Roads now travelled by the mail carriers are *not* established by the Congress at all, but are built and maintained by the counties and local road districts. Hence you would deny these roads, the type Congress is specifically and constitutionally authorized to establish, any federal aid!

The Public Roads Administration has done excellent work in research, in setting proper standards of construction, in soil survey, and testing, in uniform marking of our U. S. highways, and in administering the federal aid program throughout the United States. But this has affected only state highways. The Stennis-Young bill would extend this same technical service and federal aid to the counties and local road districts. Due in a large part to the research work, standardization and supervision of the Public Roads Administration, our state highways have been vastly improved in the past twenty years. If this same research, standardization and federal supervision, as well as federal aid, had been extended to the county roads, the true "post roads," we would probably have high type rural roads by now, instead of muddy trails the postman now travels.

DANIEL K. KELLY
County Engineer Leflore County
Greenwood, Miss.

(ENGINEERING NEWS-RECORD did not intend to imply that present rural roads are adequate. The point is that we believe improvement of the local roads is a local—not a national—problem, and should be handled locally. That could be done quite easily if Congress would withdraw from some of the fields of taxation it has preempted, letting the states apply these same taxes to meet local needs.—EDITOR).

Socialistic Trend

Sir: The socialistic trend which is being fostered in the building industry as well as in other fields is a phenomenon worthy of the attention of all engineers.

To Herbert Hoover and collaborators we are indebted for turning the cold and fact finding spotlight of the engineer on much of the waste and overlapping in administrations and functions of the government bureaus and programs. At this time efforts are being made to enlarge still further the extent of government intrusion into the fields of private enterprise by the promise of "socialized" housing, etc.

The cloak of government paternalism, if not resisted, will regiment the American taxpayer into continuous and increasing payment for politically inspired and sponsored programs hindering the free enterprise heretofore characteristic of the American people.

The state of the building industry is one of the best criterions of the nation's welfare. It must be kept healthy. Unlimited promotion of large scale public housing, inequitable restrictions of present housing rental regulations, and political encouragement of class antagonisms—"labor vs. capital", "tenant vs. landlord", "employee vs. employer,"—are general policies designed not for the public welfare, but for the immediate personal benefit of politicians, "career" bureaucrats, and battalions of jobholders.

In his analysis of wasteful methods, Mr. Hoover has no motive other than to serve his country well. It is the duty of every American engineer at the level of community, state and nation to weigh carefully any excessive intrusion of government into every private enterprise with which he is concerned, and to resist wasteful use of public funds for questionable bureaus and programs that burden the taxpayer and discourage private industry and enterprise.

ERIC FLEMING
Consulting Architect and Engineer
New Brunswick, N. J.

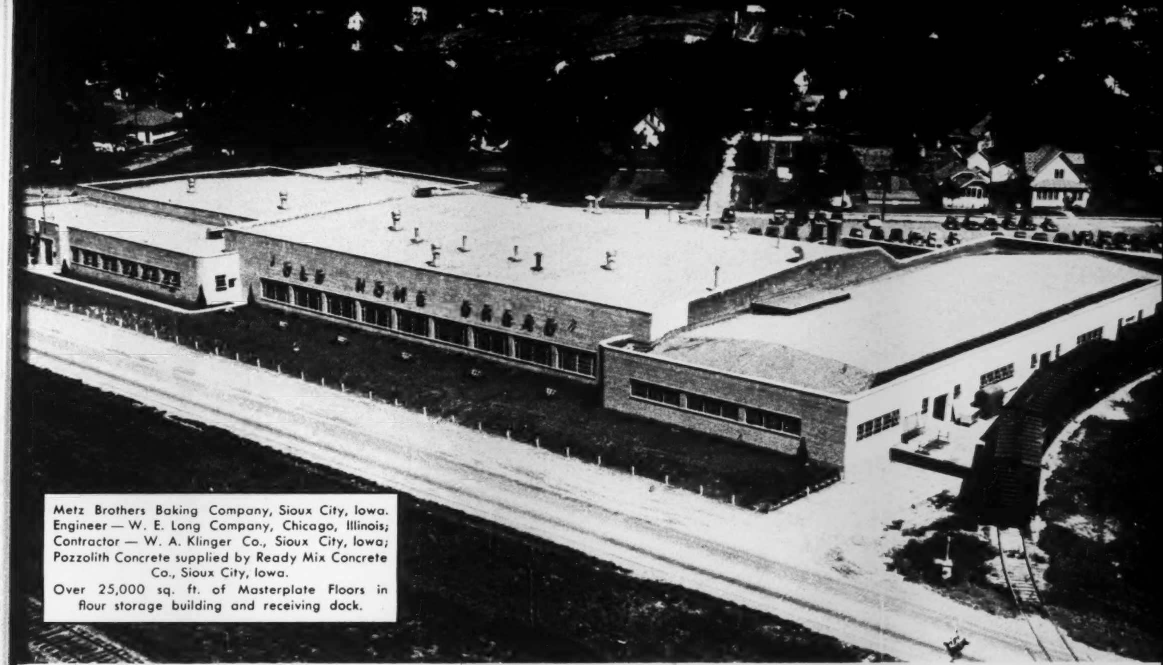
Correction

Sir: Your otherwise admirable news report of the Ohio Sewage and Industrial Wastes Treatment Conference (ENR June 30, 1949, p. 11) contains a serious error of fact concerning the activities of the Ohio River Valley Water Sanitation Commission.

Your story states: "of the 44 industries in the Ohio Valley warned by the Commission to cease stream pollution, 33 have either installed or are constructing treatment facilities for industrial wastes. On the other hand, only 4 of the 48 municipalities under similar compulsion have taken action."

The Commission has taken no such action with regard to either industrial or municipal waste discharges. Your story should have said that this was the situation in Indiana, as outlined in a recent report made by the Indiana Stream Pollution Control Board. The Indiana situation was cited simply as being indicative of the relatively rapid progress being made by industry in meeting stream pollution abatement obligations.

EDWARD J. CLEARY
Executive Director
and Chief Engineer
Ohio River Valley Water
Sanitation Commission
Cincinnati, Ohio



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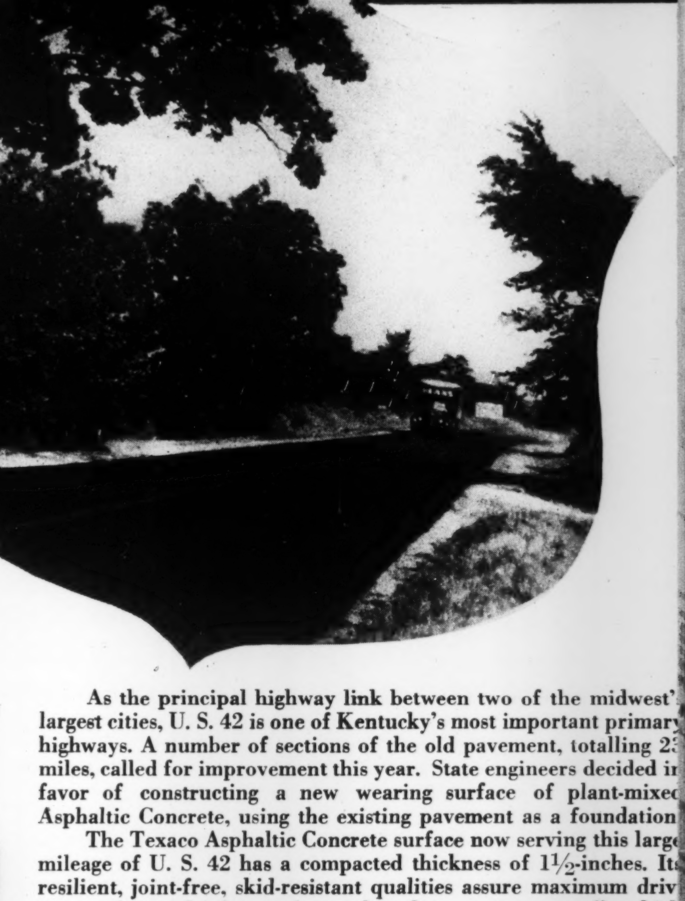

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